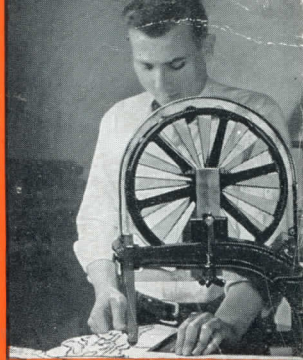


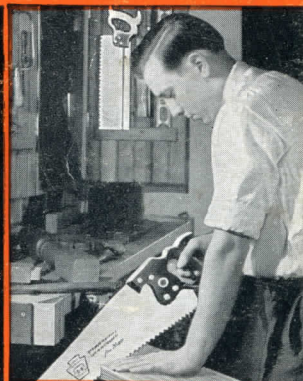
*R. R. WINANS*



# DISSTON



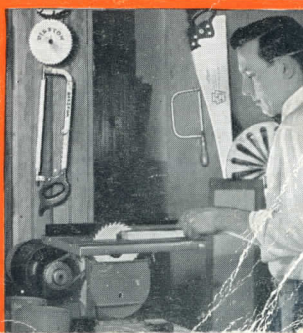
SAW  
TOOL  
AND  
FILE



# MANUAL



HENRY DISSTON  
& SONS, Inc.  
PHILADELPHIA  
U. S. A.





## **DISSTON SAWS, TOOLS, KNIVES AND FILES**

are distributed throughout the world. They may be had from good hardware merchants anywhere. If, however, you cannot get just the tool you want from your hardware merchant, write us.

**HENRY DISSTON & SONS, INC.**

**Philadelphia, U. S. A.**

**CANADIAN FACTORY, TORONTO**

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Henry Disston & Sons, Inc.  
Published February, 1936

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PRINTED IN U. S. A.

# INTRODUCTORY

Disston's ninety-five years of leadership in the saw world is again exemplified in presenting to the great army of users and prospective buyers of superior tools, the

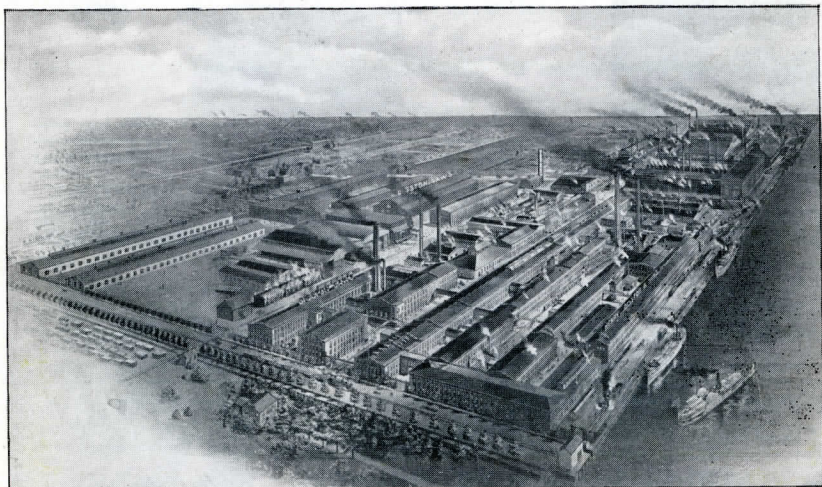
## **DISSTON SAW, TOOL, AND FILE MANUAL**

This Manual supplants the well-known Disston Saw, Tool and File Book, of which approximately one third of a million of copies have been distributed throughout the civilized world.

Disston's improved Saws, Tools, and Files have had much to do with facilitating and improving wood and metal working, and in some cases have changed established methods. These improved tools and changed methods made it incumbent upon Disston to publish this up-to-date Manual.

Mechanics, farmers, manual training students, and the amateur tool user will find this Manual a great aid in selecting the right tool for the job, while the proper use of the tool as outlined in the Manual will not only prolong its life but also keep it in condition for producing better work.

The famous Disston steel, modern design, expert workmanship, fine finish—all contribute to the Disston line of modern tools for modern craftsmanship.



DISSTON SAW, TOOL, FILE, KNIFE, AND STEEL WORKS  
Where Modern Tools for Modern Craftsmen Are Made.



# 96 Years of DISSTON

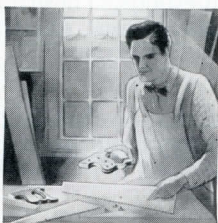
For ninety-six years, saw users have considered Disston the foremost saw maker of the world. This distinction places upon the firm a certain obligation, or responsibility, to maintain this leadership—meet every requirement of modern sawing and guard carefully the reputation their quality tools have attained.

Widely and well-known as Disston tools are, Disston realizes that every year several millions of young men, in all parts of the world, reach the age when they start using saws, tools, files, knives, etc. These young men may not

know the importance of selecting tools of Disston quality; that by actual test it has been proved that quality tools, in the long run, are many times cheaper than inferior tools; that it requires good tools to do good work and to give the longest service.

Following we illustrate and describe a few Disston achievements in saw making. They indicate the progressive spirit which has established Disston leadership—the spirit which will continue to give to saw and tool users the best in quality and modern design.

**1840**



Henry Disston began the manufacture of saws in Philadelphia, and trained saw makers in his methods. Disston Saws rapidly displaced imported saws throughout America.

**1874**



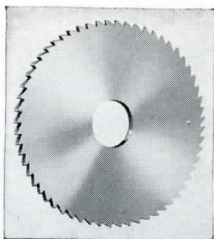
Henry Disston designed the skew-back saw. Until then all hand saws had straight backs. He called in his engineer and with a piece of crayon drew the design on the office floor.



**1855**

Disston built his own furnace and cast the first crucible saw steel ever made in

America. Disston Steel always has been famous for the service it renders to users.



**1839**

Disston produced the first 18-inch circular metal - cutting saw, which started the revolutioniz-

ing of metal cutting in America. This first milling saw was used in Midvale Steel Works.

**1868**



Disston made band saws, only  $\frac{3}{8}$ " wide. Since then Disston has frequently made band saws 66 feet long, 18 inches wide, for use in the world's largest lumber mills.

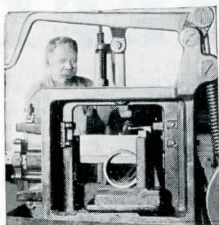
**1893**



Disston began manufacturing metal-cutting band saws, hundreds of thousands of which have been produced in the Disston Saw Works. There is a Disston Band Saw for every machine.



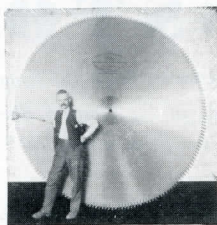
# Leadership, 1840-1936



1894

Disston made America's first machine hack saw blades. Millions of Disston Ma-

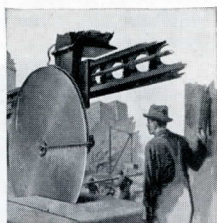
chine and Hand Hack Saw Blades are now in use throughout the world every year.



1924

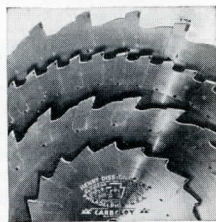
Disston made 110-inch Spiral Inserted Tooth Cut-off Saws for cutting shingle bolts from the large logs on the Pacific Coast. Each saw weighed 675 pounds; each had 190 teeth.

1904

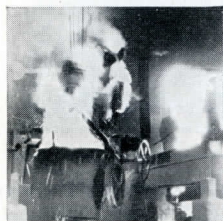


Disston made world's largest circular saw for cutting stone—a saw 100 inches in diameter with 180 teeth and with six diamonds inserted in every tooth.

1929



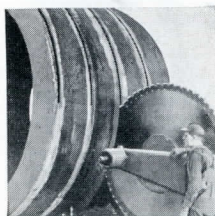
Disston perfected and introduced Disston Carboly - Fitted Saws and Knives with cutting edges tipped with Carboly, the hardest alloy ever used for saws and knives.



1906

Disston cast first heat of electric tool steel in America. Today giant furnaces, as

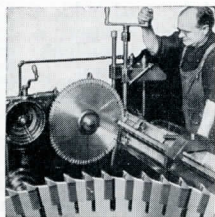
shown in illustration, in Disston Steel Works make electric steel of crucible quality.



1930

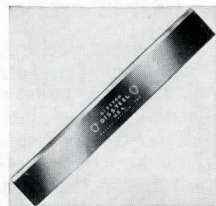
Disston made world's largest circular metal-cutting saw, 110 inches in diameter with 74 inserted teeth, used by The Midvale Company for cutting giant forgings.

1918



Disston introduced the Sectional Interlocked Inserted Tooth Milling Saw. In 1922 was awarded the Franklin Institute Medal for a notable improvement in saw making.

1932



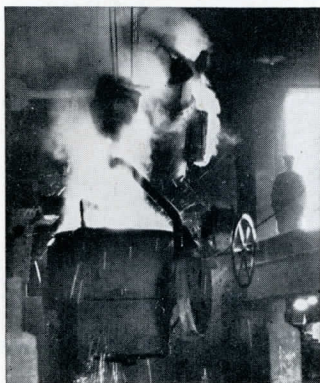
Disston metallurgists developed a new steel for thin planer and similar knives—a steel superior in many ways to High-Speed Steel. It is called DISSTEEL.

# DISSTON STEEL

*Famed for its Strength, Toughness, and Edge-Holding Qualities,  
is Made in the Disston Steel Works and Used in all Disston  
Saws, Files, and Other Tools Bearing the name Disston.*

In the first years of Henry Disston's saw making, he was obliged to use foreign made steel. He could not purchase steel of the high-grade and uniform quality which he desired for his hand saws, so he decided to make his own steel.

He turned to Crucible Steel as the solution of his problem. He built his own furnaces and mastered the art of steel making. In 1855 he melted the first Crucible saw steel in this country—a pioneering achievement in fine steel making. From that day to this, the Disston Company has been manufacturing its own saw, tool, and file steel.

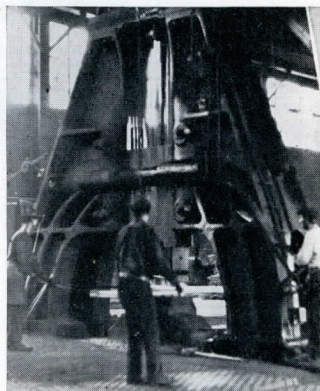


One of Disston's Great Steel Furnaces

The great steel mill is equipped with the most modern furnaces, steam hammers, rolling mills, and other devices for making steel, including pyrometers that control the heat in the furnaces to the closest degree of temperature, the best known type of testing apparatus, chemical and physical laboratories, all under the supervision of Disston's ex-

pert steel makers and nationally known metallurgists.

The quality of Disston Steel is so generally acknowledged that manufacturers of other products, who must have steel to meet the most exacting requirements, come to Disston for this finer steel.



Giant Steam Hammer in Disston Steel Works

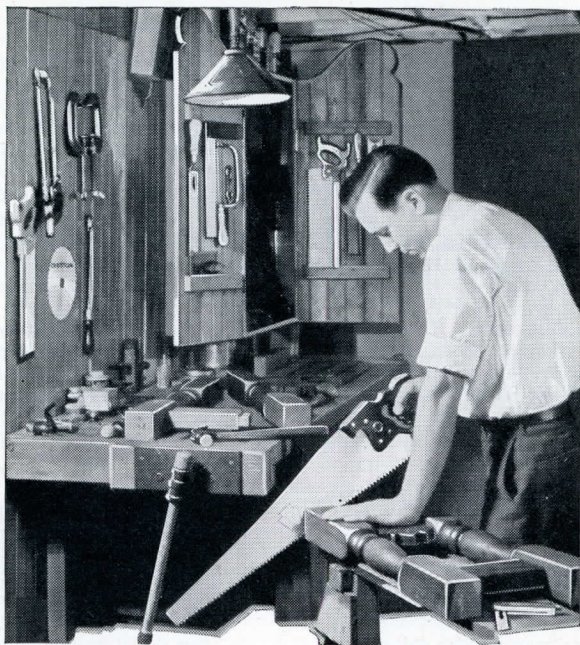
Disston Steel—the World's Great Cutting Steel, puts stamina, toughness, and long cutting life into all of Disston tools.

## Disston Temper

Disston Steel takes and holds a better temper; a *live* temper which, while hard, is tough, yet readily filed and set. With this temper, a Disston Hand and other Saws take and *hold* a keener cutting edge. The special Disston processes of hardening and tempering are based on long, practical experience and modern metallurgical practice.







## How to Choose and Use Hand Saws

On the blades of Disston Hand Saws you will see etched these words:

*"For Beauty, Finish, and Utility,  
this Saw cannot be excelled."*

They appear over the signature of Henry Disston who founded the Disston Saw Works in 1840.

What was true of Disston Hand Saws in the Founder's day is also true today, for the present Disston Hand Saws are even finer than ever before. For years Disston Hand Saws have been known as "The Saw Most Carpenters Use."

They are improved in every feature—lighter blades for easier sawing; narrower blades, to save user's strength; true taper ground from tooth edge to back and from butt to point, with even gauge along entire tooth edge, for faster cutting; and with thinner blades, yet stiff, Disston saws are always true running. They will run with less set

and stay sharp longer than any other hand saw ever made.

Handles have larger hand holes, for a more comfortable grip; covered tops which add beauty and strength to the handle, and provide for triple anchorage of the blade in the handle. Blades are let into the handle for perfect balance. The handles have the beautiful weatherproof finish, exclusive with Disston, which seals the pores of the wood and prevents warping.

Disston Saws are modern saws for modern sawing. In the Disston line there is a saw for every kind of sawing—wide blade, narrow blade; for rip or cross-cutting, fine, medium and coarse teeth—the right saw for the job. On the following pages we describe and illustrate the difference between a cross-cut saw and a rip saw; the difference between *teeth* and *points*; how to use cross-cut saws; how to use rip saws.



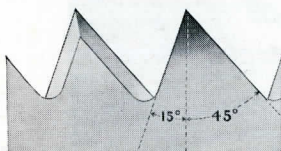
## Cross-cut Saws

A hand saw for cross-cutting is made for cutting across the grain of the wood; it cannot be used to advantage for ripping or cutting with the grain. The teeth of a cross-cut saw are shaped differently from the teeth of a rip saw, and work differently.

The front faces of cross-cut teeth have an angle of  $15^\circ$ , the backs an angle of  $45^\circ$ . Teeth usually are filed with a bevel of about  $24^\circ$ . The upper half of each tooth is set, alternately, one to the right, the other to the left, for clearance. See illustration above. The true-taper grind of Disston Hand Saws gives them added clearance in the cut.



Tooth edge of cross-cut saw



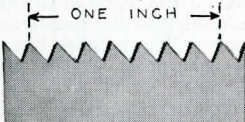
Side view of cross-cut teeth (enlarged)

Saws are made either skew-back, (as the D-8 Saw on page 8), or straight-back, (as the D-15 Saw on page 8). The skew-back blade is slightly lighter in weight; a straight back gives the blade more stiffness.

### Points to the Inch

"Points to the inch" designates the size of teeth. A saw always has one more point to the inch than complete teeth in that inch.

Disston Lightweight Hand Saws for cross-cutting are made 7 to 10 points to the inch. For most work the 8-point teeth, which are medium, are preferred. Saws with finer teeth make smoother cuts. Green, wet wood requires wider set.



8-point cross-cut teeth, showing how points are counted



7-point



9-point



10-point



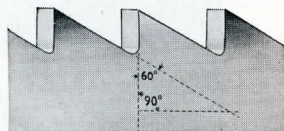
11-point

## Rip Saws

A rip saw is made for cutting with the grain of the wood. The front faces of the teeth are vertical and the backs of the teeth run at an angle of  $60^\circ$  as shown in the diagram below. The upper half of each tooth is set, alternately, one to the right and one to the left, to give clearance. This set amounts to about half the thickness of the blade, as illustrated. Disston Rip Saws have teeth at the point of the blade finer than those at the butt, to enable user to start saw in cut more easily. The teeth of a rip saw cut like vertical chisels, each tooth chipping out a small portion of the wood.



Tooth edge of rip saw

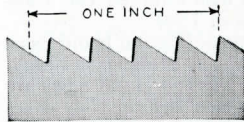


Side view of rip teeth (enlarged)

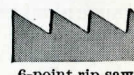
Disston Rip Saws are made 5,  $5\frac{1}{2}$ , 6 and 7 points to the inch. The  $5\frac{1}{2}$  point rip saw is most widely used and will prove most satisfactory for general work. Some mechanics, however, prefer blades toothed 6 points to the inch.

### Lengths of Saw Blades

The length of a rip or cross-cut hand saw is measured from point to butt of the cutting edge of the blade. The most popular length in either rip or cross-cut hand saws is 26 inches. Disston Saws, for cross-cutting, are made with blades 20, 22, 24 and 26 inches long; and, for ripping, with blades 22, 24, 26 inches long. Saws 24 inches, and shorter, are termed panel saws. Of the shorter saws, the 22-inch 10-point cross-cut is most popular.



$5\frac{1}{2}$ -point rip teeth, the popular size for rip saws

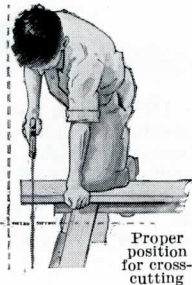


6-point rip saw teeth

## How to Use a Cross-cut Saw

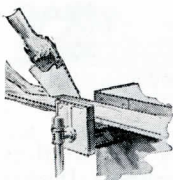
Keep your saw *sharp* and set properly. Instructions for setting and filing are given on page 37.

The proper position for crosscutting is shown below. An imaginary line through the saw, arm, and shoulder would be slightly to the left of the saw blade, permitting view of the line where the work is to be cut. Raise the work high enough to prevent point of blade from striking floor or ground.



Proper position for cross-cutting

To start the cut, rest the blade on the waste side of the cut, support the side of the blade with the left thumb, and draw the saw toward you a few times until a slight groove is formed; then cut straight with a full stroke.



Crosscutting vise-held work

between the tooth edge of the saw and the face of the work. Extending the forefinger alongside the handle aids in guiding the blade. Take long, easy strokes and make each stroke do its work.

Supporting the waste side of the work will prevent the wood from breaking when the cut is nearly completed. Do not twist off strips of waste with the saw blade.

Look carefully at repair or alteration work to see that no nails are in the path of the saw.

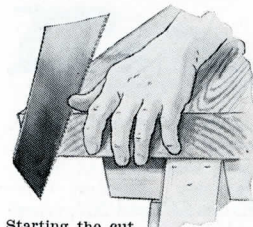
Don't throw your saw around; keep it oiled and hung up when it is not in use.



Proper angle of saw for cross-cutting

## How to Use a Rip Saw

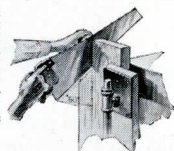
The position for ripping should be such as to permit long, easy strokes. The user who does most of the cutting with a few inches of blade, in the



Starting the cut with a draw stroke

middle of the saw, not only has difficulty in keeping the line of the cut straight, but he also dulls the saw more rapidly, because a few teeth are called upon to do all the cutting. Full strokes are desirable in both ripping and cross-cutting.

In ripping, the cut should be started with the finer teeth, at the point of the blade. Ripping usually is done with the work supported on saw horses, but if the board must be held in a vise, place it to give approximately the cutting angle shown to the right.



An angle of 60° between the cutting edge of the saw and the face of the work makes the saw cut with the greatest ease.

Disston Rip Saws, with their Disston Steel and temper and Disston true-taper grinding, cut with extreme ease when kept properly sharpened, and it is not necessary or desirable to force them in the cut.



Proper angle of saw for ripping

No saw can continue to do good work indefinitely without resharpening, although all Disston saws require less sharpening than others and, when sharpened, retain their keen cutting edges longer. Keep your saw sharp.

In ripping and crosscutting, it is good practice to cut on the waste side of the line instead of halving the line.

See next page for illustrations and description of Disston Hand Saws.



## Some Popular Disston Hand Saws

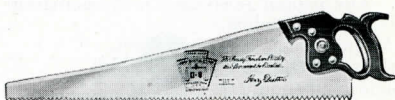
*These Modern Saws, for Modern Sawing, are all made from the famous Disston Steel.*

### D-15 Lightweight, Straight-back



Improved pattern rosewood handle. New grip, roomy and comfortable. New carving, new weatherproof finish, nickel-plated screws. Disston true-taper grind. Blades 24" and 26", cross-cut, 7, 8, 9 and 10 points; rip made in 26" length, 5½ and 6 points. This and D-115 are the finest saws made.

### D-8 Lightweight, Skew-back



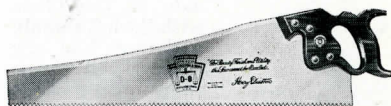
Differs from D-8 Regular Pattern in width of blade only. High polish, beautiful finish. Applewood handle; new weatherproof finish; brass screws. Disston true-tapered grind. Made in 26" length only, 7, 8, 9 and 10 points cross-cut. Rip, 26", 5½ and 6 points.

### D-7 Lightweight, Straight-back



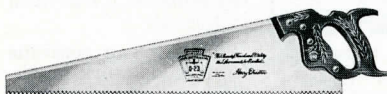
Improved pattern of beechwood handle, new weatherproof finish; brass screws. Higher polish, greater beauty. Disston true-taper grind. Made in 26" length only. Cross-cut, 7, 8, 9 and 10 points. Rip, 26", 5½ and 6 points. *Made also in Regular Pattern—20, 22, 24, 26" lengths.*

### D-8 Regular Pattern, Skew-back



Higher polish; greater beauty. Applewood handle, with new weatherproof finish. Brass screws. Disston true-taper grind. Cross-cut: 20", 8, 10 and 12 points; 22", 8, 10 and 12 points; 24", 7, 8, 9 and 10 points; 26", 6, 7, 8, 9 and 10 points. Rip made 22", 7 point; 24", 6 and 7 points; 26", 5, 5½ and 6 points.

### D-23 Lightweight, Straight-back



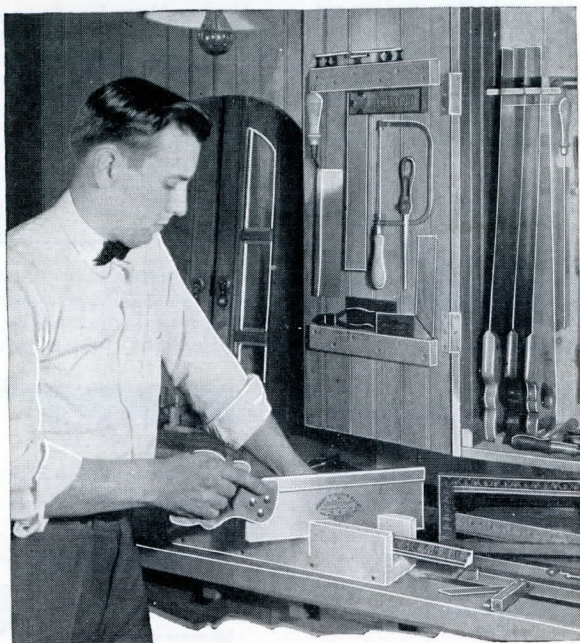
Improved pattern of applewood handle, carved; new grip, roomy and comfortable; new weatherproof finish. Brass screws. Greater beauty. Disston true-taper grind. Cross-cut made in these lengths and points: 24", 7, 8, 9 and 10; 26", 7, 8, 9 and 10 points. Rip made in 26", 5½ and 6 points.

### D-12 Lightweight, Straight-back



Improved pattern of applewood handle, carved; new weatherproof finish. Nickel-plated screws. Greater beauty. Disston true-taper grind. Blades, cross-cut, 26", 7, 8, 9 and 10 points. Rip, 26" in 5½ and 6 points.





## How to Choose and Use Back Saws

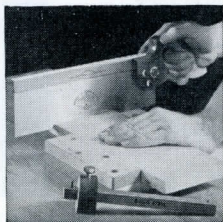
You will find your Disston Back Saw the handiest of small saws. It is indispensable for fine joinery or cabinet work. Its fine teeth and stiff back enable you to do smooth, accurate cutting in making mitres (corner angles), dados (grooves), tenons (in mortise-and-tenon joints), etc. It is useful for cutting moldings, picture framing and other light stock.

Cabinet-makers prefer the Disston Back Saw because it has a heavier back, which stiffens the blade and keeps it down in the cut; because the teeth are shaped and set to cut smoother and easier; because the blade and handle are balanced to insure better work; and because Disston Back Saws are made of Disston Steel, with the Disston temper and edge-holding qualities.

Disston Back Saws are made in lengths of 8, 10, 12, 14 and 16 inches, with from 12 to 16 points to the inch. The 12-inch length, 14 points, is most popular.

In using a back saw in a mitre box be sure that the cut to be made lines up with the slots in the box. Hold work against back of box and start cut carefully with a back stroke, holding handle of saw slightly upward. Gradually level the saw and continue cutting with blade horizontal. Hold saw firmly for clean, straight and accurate cutting.

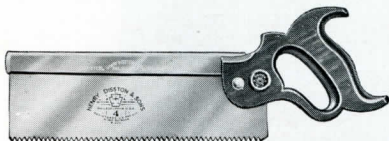
You should also have a bench hook (at left) to support the work when not using a mitre box. Have bench hook at left of cut to be made. Use two bench hooks to support long material. In making mortises, tenons,



etc., keep saw level after starting cut, and watch depth at both ends of cut. Use a light, even, level stroke.

To sharpen a back saw proceed as in sharpening a hand saw. Use a 5-inch Disston Special Extra Slim Blunt Saw File or a Disston Slim Taper Saw File.

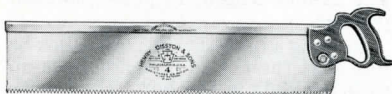
### Disston No. 4 Back Saw



Handiest of all small saws. Necessary for all fine joinery and cabinet work. The finest back saw made. Blade is of Disston Steel, with the Disston temper—hard and tough. Teeth are shaped for fast, accurate cutting. Backs are extra heavy, of bright, polished steel. Handles are of beechwood, with the Disston weatherproof finish; brass screws.

Length of Blade	Width Under Back	Points to Inch
8 inches	2¼ inches	16
10 inches	2½ inches	15
12 inches	3 inches	14
14 inches	3½ inches	13
16 inches	3¾ inches	12

### Disston No. 4 Mitre Box Saw



The leading manufacturers of mitre boxes supply Disston Saws as standard equipment for them. Every Disston Mitre Box Saw is tested for accuracy. Every one will run true and cut a smooth, accurate joint. The blade is placed deep into the handle, and the back is extra heavy, preventing any twisting in the cut. All blades are made 11 points to the inch. Blade made of Disston Steel, with hard, tough Disston temper. Back of bright, polished steel. Beechwood handle, Disston weather-proofed finish; brass screws.

Disston Mitre Box Saws are made in all required sizes; those 4 inches under back in 18 to 26-inch lengths; 5 inches under back, 28 and 30-inch lengths; 6 inches under back, 30 inches in length.

The following sizes are most popular:

Length of Blade	Width Under Back
20 inches	4 inches
26 inches	4 inches
28 inches	5 inches

### Disston Dovetail Saws Nos. 68, 70, 71

Wherever the finest possible joint is needed, and for dovetailing, tenoning, model building, pattern making, etc.,



No. 68

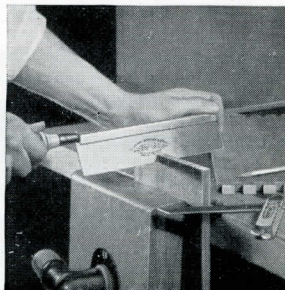
a Disston Dovetail Saw is needed. No. 68 has straight handle; No. 70, open grip handle, No. 71 is same as No. 68, with handle and blade offset to permit cutting with blade flush to the board in



No. 70

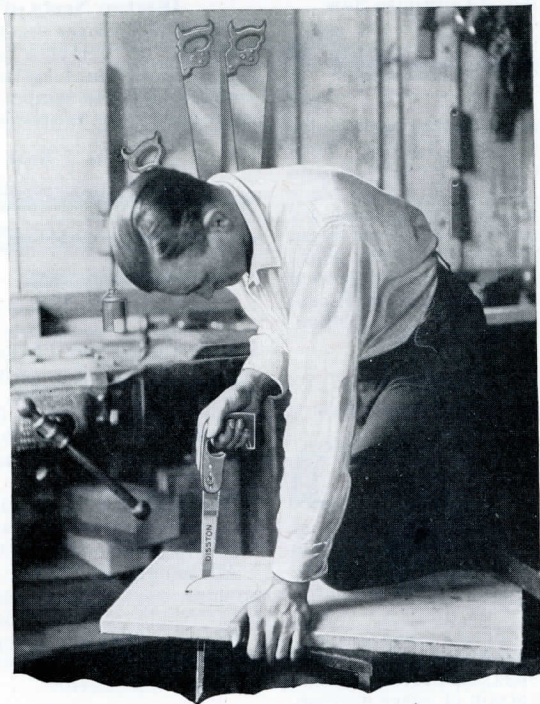
a floor or wall. All are extremely thin (.018), with fine teeth (17 points). Sturdy brass-plated steel back supports the Disston Steel blade.

Length of Blade	Width Under Back
6" (Nos. 68	1½"
8" (Nos. 68 and 70)	1½"
10" (Nos. 68, 70, 71)	1¾"
12" (No. 68)	1¾"



Dovetailing with a Disston No. 68 Dovetail Saw





## How to Choose and Use Compass and other Small Saws

There are many uses for compass saws in the shop, in the home, on the farm, in manual training schools. Just the saw for cutting curves and circles, and when starting a cut from a hole bored in the wood. If you want to make brackets for a shelf or round the corners of book shelves, etc., just mark your line and saw along it. Handy for cutting holes in boards and plaster to receive gas or water pipes, cutting floor boards, etc.

Disston Compass and Nest Saws are tough and strong, made to stand the strain of curve cutting. All are made of Disston Steel and tempered for long cutting life. They are taper-ground from tooth edge to a thin back which allows for clearance. This means easier,

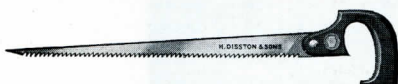
faster cutting and better work. Disston Compass Saws taper to a sharp point, and are toothed to the point for easy access to holes in wood, and for cutting sharp curves.

The new flat-top, hardwood handle, with its comfortable grip, adds much to the usefulness of Disston Nos. 115, 4 and 8 Compass Saws, and Nests of Saws. It permits the user to do under-cutting, to work in close quarters, and to make cuts easily in corners, molding, siding, flooring, etc., with the blades in reverse position.

Disston makes a full line of Compass Saws. A few of the most popular styles are shown on the next page.

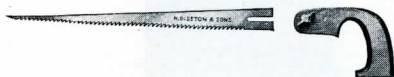


## Disston No. 2 Compass Saw



This Compass Saw has been giving fine service to users for years. Open grip handle is shaped for easy control when sawing; has Disston Steel blade toothed to point; taper-ground for clearance; tempered to withstand strain of curve cutting; tapered to sharp point; 8 points to inch. Applewood handle has Disston weatherproof finish; two brass screws, one a medallion. Sizes, 10, 12, 14 and 16 inches.

## The Disston No. 4 Interchangeable Compass Saw



This saw will prove a convenient and practical tool for any user's kit. The flat-top handle has weatherproof finish, and comfortable grip. Different lengths of blades—10, 12, 14, 16-inch,—different lengths for different kinds of work. Blades can be used in reverse position—all of Disston Steel; taper-ground; tempered to stand strain of curve cutting. Cluster bolt and wing-nut adjustment on handle holds the blade firmly.

## No. 8 Plumbers' Compass Saw



The Disston No. 8 Plumbers' Compass Saw has an extra heavy Disston Steel blade, specially tempered. It is taper ground to give clearance in the kerf and make sawing easy. The butt of the blade is slotted; hole directly in front of slot receives bolt; cluster bolt and wing-nut clamps blade securely in handle—no moving front or back, up or down. Can be used in regular or reverse position.

Square top beechwood handle, comfortable open grip; Disston weatherproof finish.

Made in 12 and 14-inch lengths.

## Disston Nests of Saws

Nests of saws are practically a combination of compass saws—several blades of different lengths, and in some cases, of different temper—used in the same handle, for various kinds of work.

### No. 7 Nest



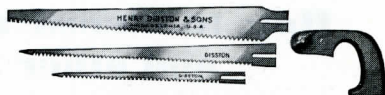
The Disston No. 7 Nest is widely used by plumbers, electricians, and others. One of the 14-inch blades has special temper for cutting wood in which nails are embedded, lead pipe, thin metals. The other 14-inch blade is for regular compass saw work. Both blades tempered to withstand strain of curve cutting.

The keyhole blade is 10 inches long, tempered; tapered to sharp point for keyhole and other sharp-curve cutting.

All blades of Disston Steel taper-ground—used in the same handle, in either regular or reverse positions.

The improved square top handle has weatherproof finish; cluster bolt and wing-nut adjustment.

### No. 3 Nest



The Disston No. 3 Nest of Saws can be used for a wide range of work.

Keyhole blade, 10 inches long, 10 points, for cutting keyholes, sharp curves, and other small work.

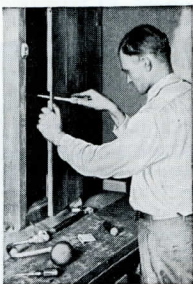
Compass blade, 14 inches long, 8 points; for curves and shapes in heavier work.

Pruning blade, 16 inches long, 8 points, for pruning fruit and ornamental trees, shrubbery, etc. Can also be used as a general purpose Saw.

All blades of Disston Steel; all fit same flat-top handle, which permits use in regular or reverse position. Handle has weatherproof finish. Cluster bolt and wing-nut adjustment.

## Disston Keyhole Saws

To cut a keyhole it is good practice to mark with pencil or scriber, shape and size of hole desired, then bore a hole through the door, chest, drawer, etc., and with one of these handy little saws cut along the marked line.



**No. 95 Keyhole Saw**



The Disston No. 95 is the finest and most convenient of all keyhole saws. Made for small work in close quarters—cutting keyholes, fret work, model work, etc. The blade is made of Disston Steel; thin back, tapering to a sharp point; 10 points to the inch.

The handle is made of hardwood, polished; rounded; has slot in handle to receive blade; steel ferrule. Blade inserted at butt end of handle; held at required length by steel thumb screw, which engages special steel grip inside the ferrule. Handles and blades will be supplied separately if desired. Handle is 7 inches long; blades 10 inches long.

**No. 5 Keyhole Saw**



The Disston No. 5 Iron Pad Keyhole Saw has a slotted pad for blade to pass through; hexagon head screw locks blade at various lengths. Blade of Disston Steel, 7 inches long, toothed to a sharp point; 10 points to the inch. Blade can be reversed and used as screw driver.

**No. 15 Keyhole Saw**



The Disston No. 15 Keyhole Saw has open-grip, hardwood handle. Fine for cutting frets and other fine work. Dis-

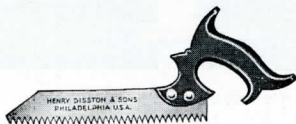
ton Steel blade, thin back, tapered to sharp point; 10 points to inch; two brass screws. Made 10 and 12-inch lengths.

**No. 1 Bead Saw**



The Disston No. 1 Bead Saw is used for scoring window frames, door frames, etc., preparatory to inserting metal or other weather stripping. Disston Steel blade, 10 inches long,  $1\frac{1}{2}$  inches wide at handle, curving to point; 5 teeth at point of blade have  $\frac{1}{4}$ -inch spacing. Curved hardwood handle; orange lacquer; 3 screws.

**No. 1 Pattern Makers' Saw**



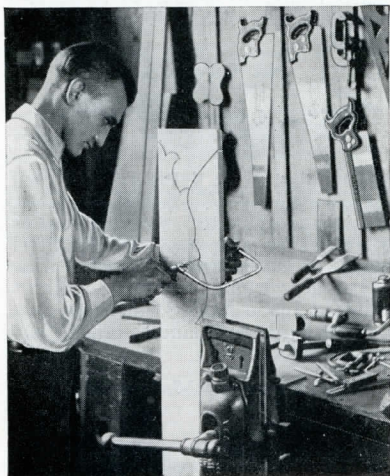
The blade of the No. 1 Disston Pattern Makers' Saw is extremely thin—.22 gauge (.028). This saw is designed for small, accurate work in pattern and cabinetmaking. The teeth are specially shaped to make a fine, exact cut. They are made 15 points to the inch. Blade, of Disston Steel with Disston temper, is  $7\frac{1}{2}$  inches long and  $1\frac{1}{4}$  inches wide. Open handle, applewood; brass screws.

**No. 6 Stair Builders' Saw**



Used for trenching out stringers, making slots in stair treads or risers, cutting accurate dados, etc. Removable blade may be raised or lowered in handle to cut any depth up to  $\frac{3}{4}$  inch. Blade made of Disston Steel with Disston temper, is 6 inches long and  $1\frac{1}{2}$  inches wide, 20 gauge (.035), toothed eight points to inch. Handle, of hardwood, extends entire length of blade; has convex curve to receive hand when extra pressure is desired.

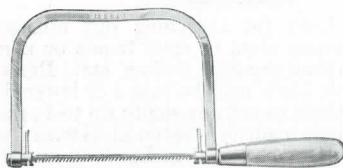


**Disston No. 10 Coping Saw**

Cutting Scroll with Coping Saw

The Disston Coping Saw is designed for cutting curves. It is also used for shaping the ends of moulding for joints, for scroll work, making shelf brackets, wooden toys, etc. It takes narrow blades, only  $\frac{1}{8}$  inch wide, fitted at each end with a pin which is inserted in stretcher at each end of the frame. Blades are  $6\frac{1}{2}$  inches long between pins. Extra blades for a few cents each.

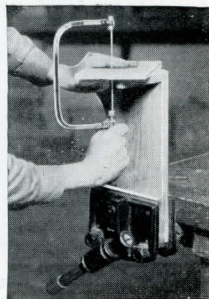
The blade is strained tight in the frame, and may be turned as desired for cutting sharp angles, etc. The frame is made of Disston Steel. It is  $\frac{3}{8}$  inch wide;  $\frac{3}{16}$  inch thick; and  $4\frac{1}{2}$  inches deep from tooth edge to inside of back. Handle is of polished hardwood, with nickel-plated ferrule and machined stretchers.



No. 10 Coping Saw

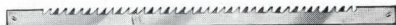
A square nut forced into the handle engages threaded end of stretcher. By turning handle blade is strained.

A coping saw is generally used with a saddle, as illustrated, to support the work. It consists of a board cut with a V notch about 3 inches wide and  $3\frac{1}{2}$  inches deep, attached to a support as shown. The stroke should be as long as possible, to avoid overheating the blade.



Using Coping Saw with Saddle

In cutting scroll work, furniture overlays, etc., the piece marked with the design is held on the saddle and shifted so that the saw can accommodate the curves as they are encountered. Change the angle of the blade in the frame when making sharp turns, to avoid breakage of blades.

**Disston Coping Saw Blades No. 10**

For wood; made of spring saw steel. Bright blade. Filed and set. Blade fits Disston No. 10 frame. Length overall  $6\frac{3}{4}$  inches;  $6\frac{1}{2}$  inches pin to pin;  $\frac{1}{8}$  inch wide; 17 points to inch.

**No. 20 (pin-end)**

For cutting wood, bakelite, brass, celluloid, bone, composition board, copper, and other metals. Oil hardened and tempered, both set and filed; black finish. Length  $6\frac{3}{4}$  inches overall;  $6\frac{1}{2}$  inches between pins, 17 points.

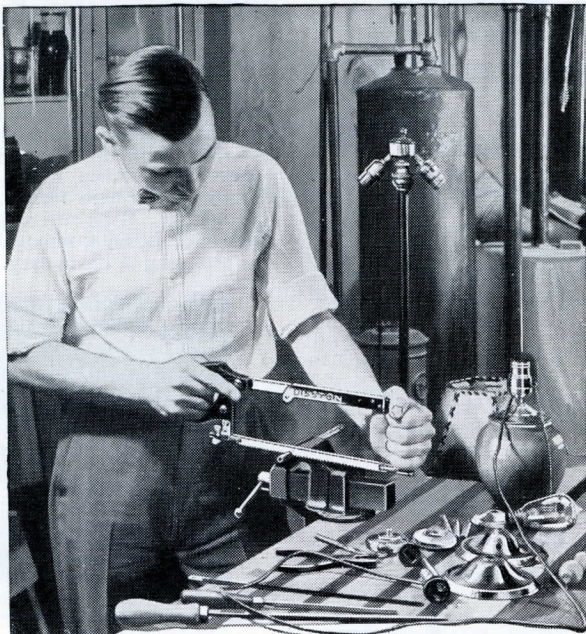
**No. 2 Coping Saw Blades (loop-end)**

An all-purpose blade for cutting wood, bakelite, brass, celluloid, bone, composition board, copper, etc.

Oil hardened and tempered; teeth set and filed; black finish. Ends of blade are looped and tempered to stand strain of tension. Length 6" overall,  $\frac{1}{16}$ " wide; 18 points to the inch.

*Disston makes a full line of Coping, Scroll, and Jewelers' Blades.*





## How to Choose and Use Hack Saws

*Disston Chromol, Duraflex, Double-Flex, and High-Speed Steel Blades are the Best Blades Made. Disston Hack Frames are Handy and Durable.*

Millions of Disston Hack Saws are used annually in metal-working plants, manual training schools, and home workshops, for cutting metals of all kinds. Disston makes a full line of hack frames and three kinds of blades for them, also two kinds of machine blades, each for a specific purpose.

Disston also makes a full line of circular metal saws ranging from 1½ inches in diameter up to 110 inches in diameter. Both hack saw blades and metal-cutting circular saws are made for cutting all kinds of metal.

Here are four important suggestions in choosing a hack saw:

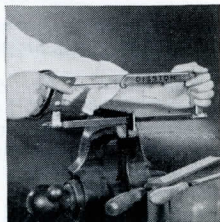
- 1—Be sure the frame is strongly built, and suitable for the job.
- 2—Stretchers should be simply made,

yet efficient, allowing for easy removal, replacement, and straining of blades. Reversible stretchers are convenient.

3—A handle should have comfortable grip and be placed on frame to bring pressure on the blade with minimum effort.

4—Blades should have correct number of teeth for material to be cut.

On the following pages you will learn how to use a hack saw, what blade to use for different metals, and how to hold work in the vise.



### Disston Hack Saw Frames No. 36½—Nickel-plated



This is an ideal frame for all around use. Extension frame, adjustable by half inches for blades 8 to 12 inches. Made of Disston Steel,  $\frac{3}{4} \times \frac{3}{16}$  inch; rounded edges, nickel-plated. Depth,  $3\frac{5}{16}$  inches from tooth edge to inside of back; eyes are riveted to frame; stretcher on front end, round; on handle end, square. Pin in stretcher holds blade in position.

Hardwood handle, black finish; large, comfortable, closed grip, fastened to frame with two saw screws.

Wing nut adjustment makes removal, replacing, and straining of blade easy.

### No. 110—Nickel-plated



The Disston No. 110 Hack Saw Frame is adjustable for blades 8 to 12 inches; stretchers are reversible to four positions.

Frame of Disston Steel,  $\frac{5}{8} \times \frac{3}{16}$  inch; rounded edges; depth  $3\frac{3}{8}$  inches from tooth edge of blade to inside of back. Eyes are riveted to frame; square stretchers, cannot pull out—pin in each one to engage hole in blade.

Hardwood handle, turned for comfortable grip; black finish; wing nut adjustment at front of frame makes removal, replacing and straining of blade easy.

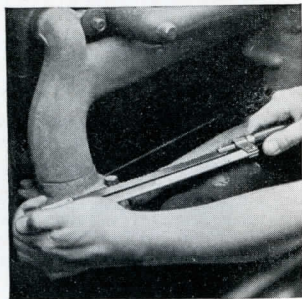
### No. 200



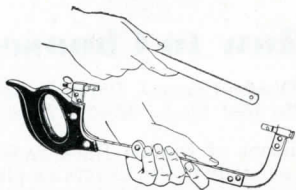
The Disston No. 200 Hack Saw Frame is designed for use in close quarters. Enables you to cut readily where wide frames can't get in. Its low back makes it a handy tool for electricians, plumbers, and garagemen.

Disston Steel frame,  $\frac{5}{8} \times \frac{3}{16}$  inch,

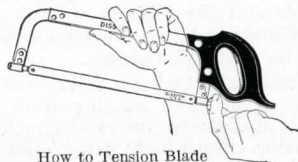
polished, rounded edges. Eyes and ends of frame are one piece of steel. Ends securely fastened to back with two rivets. Depth, one inch from tooth edge of blade to inside of back. Square stretchers, to which blade is attached by pins; reversible to four positions; takes 8-inch blade. Turned hardwood handle, black finish, nickel-plated ferrule; rivet through ferrule, stretcher, and handle. Wing nut adjustment at front end of frame; removal, replacing and straining of blade easy.



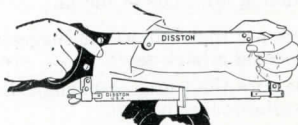
Cutting through rusted bolt on an Automobile Manifold, with No. 200 Hack Saw



How to Insert Blade in Hack Saw Frame



How to Tension Blade



How to hold a Hack Saw Frame when Sawing



## Importance of Using the Right Hack Saw Blade

The proper use of the proper blade for the material to be cut is essential to best results. Accordingly we give below a list of questions and answers, as the most practical way of guiding you in the selection and use of hack saw blades.

**Question 1.** How many kinds of blades does Disston make?

**Answer.** Four kinds of blades: High-Speed Steel, Chromol, Duraflex, Double-Flex.

**Question 2.** Can these blades be used for both hand and machine work?

**Answer.** Disston makes both High-Speed Steel and Chromol Blades for both hand and machine use. Duraflex and Double-Flex Blades are for hand use only.

**Question 3.** How do these blades differ?

**Answer.** High-Speed Steel Blades are made from Disston's famous high-speed steel which can be run at extra high speed in the hardest metals. The teeth are strong, with proper angle and pitch; every third tooth without set to serve as a raker or cleaner tooth. Machine blades made in lengths, 12 to 24 inches; teeth varying 4 to 14 to inch. Hand blades, 10 and 12 inches; teeth, 14 to 32 to inch. Chromol blades are made from a special alloy steel, hardened and tempered throughout. The teeth are milled at a special angle. Every third tooth is left without set to act as a cleaner tooth, which plows straight through the cut and carries out chips which otherwise would slow up speed and dull teeth. Machine blades made 10 to 24 inches; teeth 4 to 18 to inch. Hand blades made 8, 10, 12 inches; 14 to 32 teeth to inch.



Disston High-Speed Steel Hack Saw Blades for Hand and Machine Use are identified by Orange band on end of blade.

Duraflex Hack Saw Blades are flexible—hardened on the tooth edge only, to permit bending or twisting without breaking easily. They have

the same style teeth as the Chromol Blades. Made 8, 10, and 12 inches; teeth 14 to 32 to inch.



Disston Chromol Hack Saw Blade for Hand and Machine Use

Double-Flex Hack Saw Blades are manufactured for electricians, plumbers and auto mechanics. These blades have a spring temper throughout and hardened to the correct degree to prevent stripping of teeth. Teeth arranged in special way and set in series to prevent binding.

**Question 4.** When should these different blades be used?

**Answer.** High-Speed Steel Blades and Chromol Blades can be used on all kinds of metals. The High-speed blade is the longer wearing of the two. The Duraflex blade is designed for materials which are unstable and apt to break the blades; or where cutting has to be done in an awkward position. Double-Flex Blades are especially recommended for cutting soft metals.



Disston Duraflex Hack Saw Blade for Hand Use

**Question 5.** What point blades should be used for various materials?

**Answer.** 14 Teeth—for stock of sufficient thickness to avoid catching teeth against edges—steel rails, cold rolled stock, cast iron.

18 Teeth—for general use. For cutting tool steel, hard metal, and light structural shapes, etc.

24 Teeth—for sheet metal or tubing from 16 to 20 gauge, thin brass, copper, drill rod, wrought iron, pipe, etc.

32 Teeth—for tubing with thin walls and for thin sheet metal.

In general, the coarser the tooth the faster the cut; the finer the tooth the less risk of tooth breakage.

**Question 6.** How should a Disston Hack Saw be used in a hand frame?

**Answer.** Strain the blade tightly in a frame. Cut slowly, not over 60 strokes per minute, for best results. Put pressure on forward stroke to avoid slipping and lift slightly on backward stroke. Make each stroke do its work. Do not bend frame sideways.

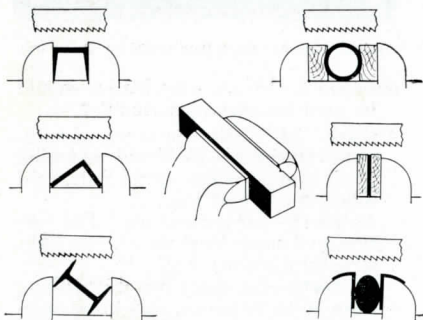
**Question 7.** What are some common abuses that cause breakage of teeth and blades?

**Answer.** The breakage of teeth is caused usually by trying to saw metal that is too thin for the number of teeth per inch in the blade. (Remember that at least two teeth should be engaged in the work at all times.) The breakage of the blade itself may be caused by failure to strain the blade tightly in the frame or by carelessness in bending the frame sideways and so snapping the blade.

**Question 8.** What causes undue wear of teeth?

**Answer.** Overspeed and insufficient pressure which causes unnecessary wear and slipping of the blade, with only partial cutting effect.

### How to Hold Work in Vise



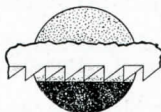
Above are suggestions for clamping irregular shapes. To hold oval or circular work in square jaw vise, use wood, leather, or copper filler pieces to grip work and to prevent scarring.

### Suggestive Diagrams

Importance of selecting Hand Hack Saw Blades with proper number of teeth for cutting various metals:

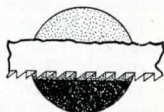
14 Teeth Per Inch, for Softer Metals, Large Sections

CORRECT



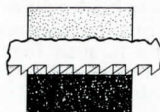
Plenty of Chip Clearance

INCORRECT

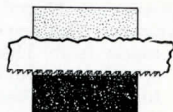


Fine Teeth. No Chip Clearance. Teeth Clogged

18 Teeth Per Inch, for Tool Steel, High Carbon and High-Speed Steel

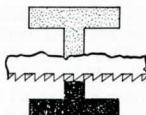


Plenty of Chip Clearance



Fine Teeth. No Chip Clearance. Teeth Clogged

24 Teeth Per Inch, for Angle Iron, Brass, Copper, Iron Pipe, Etc.

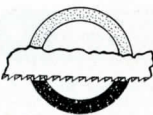


Two Teeth and More on Section



Coarse Teeth Straddles Work Stripping Teeth

32 Teeth Per Inch, for Conduit and Other Thin Tubing. Sheet Metal Work



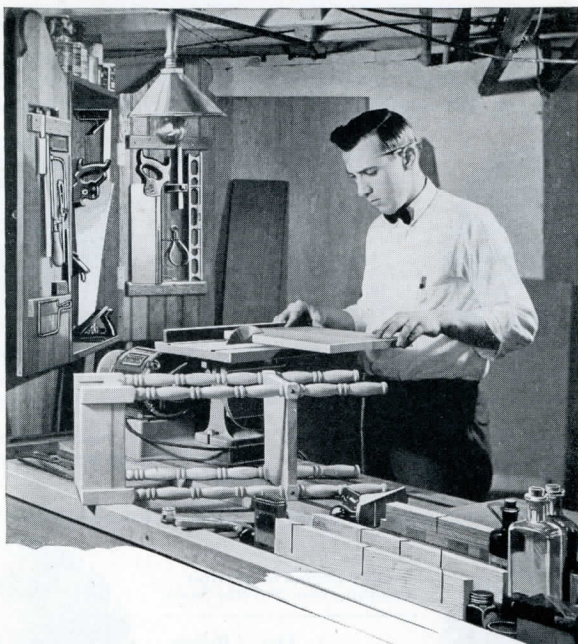
Two or More Teeth on Section



Coarse Pitch Straddles Work

For All Round Work In Hand Frames We Recommend 18 Teeth Per Inch





## How to Choose and Use Circular Saws

Disston Small Circular Saws are widely used on motor-driven machines in mill and home workshops, and in training schools. They speed up production. It is a pleasure to set the gauge and cut your work to proper size, providing you have the right saw for the job. So when choosing a saw for your machine, consider the following points:

- Is it for ripping, cross-cutting, mitering, grooving?
- Is it for cutting wood, metal or other material?
- Is a smooth edge desirable?
- Is it speed you want, principally?
- From lists on page 20 you can select just the Saw you need.



Fig. 1—This is a section of standard cross-cut teeth, for cutting across the grain.

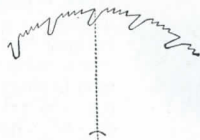


Fig. 2—This is a section of standard rip teeth, for cutting with the grain.

A well-equipped shop should have a rip, cross-cut, combination and grooving saw.

Disston makes a full line of these small saws, all of the same steel that goes into the large dimension circulars, including the 110-inch saws for the great mills on the West Coast, and all made by the same experienced workmen. Also a full line of small circular saws for cutting metal.

That you may be guided in selecting the right saw for the work to be cut, below we give diagrams of three different styles of teeth. Fig. 1 shows cross-cut teeth; Fig. 2 rip teeth; Fig. 3, combination teeth for cross-cutting, ripping, and mitering.

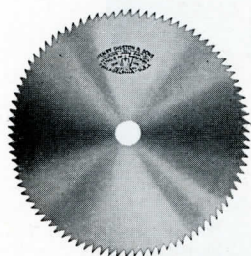


the collar line. This gives clearance without set or swage of teeth. This style of saw cuts so smoothly, planing, sanding or dressing the cut is unnecessary.

Fig. 3—Section of four cutting teeth to one raker tooth type of hollow-ground Combination Saw, for ripping, cross-cutting and mitering. Ground to taper from rim to

## Use Disston Circular Saws for Better Work

These Disston Circular Saws are very popular for the small mill, the home workshop, and for manual training schools. All of Disston Steel, with just the right temper and tension, and correctly formed teeth.

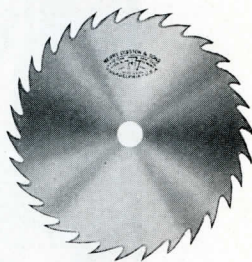


Disston Cross-Cut Saw

Dimensions of Disston Rip and Cross-Cut Saws

Diameter	Thickness, Gauge
6 inches	18
8 inches	18
10 inches	16
12 inches	15
14 inches	14

When ordering any type of circular saw state diameter of arbor hole.

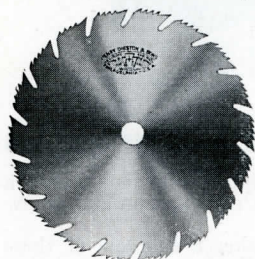


Disston Rip Saw

This saw has fine teeth—made for cutting across the grain in the wood. Set and filed, ready for use.

This saw has coarse teeth—made for cutting with the grain. Set and filed, ready for use.

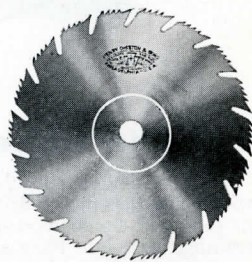
## Here are two very popular styles of Disston Combination Saws:



Flat Ground

Dimensions of Disston Combination Novelty Saws

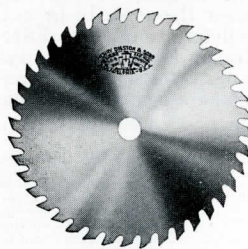
Diameter	Flat Ground Gauge	Hollow Ground Gauge
6 inches	18	16-19-16
8 inches	17	15-18-15
10 inches	16	14-17-14
14 inches	14	12-15-12



Hollow Ground

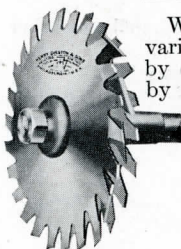
Cutting teeth require set. For general work you will find a Disston Flat-Ground Combination Novelty Saw will give you excellent service. Cross-cuts, rips, and miters.

Cutting teeth require no set. For smooth cutting, use the new Disston No. 32 Hollow-Ground Combination Novelty Saw. Takes a very fast feed. Cross-cuts, rips, or miters.



No. 8 "Fast Cut" Saw

For fast, easy cutting; has no equal; takes less power; rips, cross - cuts, miters; all cutting teeth—no rakers; easy to sharpen. Made 6", 8", 10", 12" and 14".



No. 30 Groover

Width of groove can be varied from  $\frac{1}{8}$ " up to  $\frac{1}{2}$ " by eighths, wider grooves by sixteenths, adding extra inside pieces. Cuts well with or against the grain or diagonally. The No. 30 is arranged in eight sets. No. 1 Set cuts  $\frac{1}{8}$ " to  $\frac{3}{8}$ " by  $\frac{1}{8}$ ". Made 6" in diameter and up.

Disston also makes a full line of Circular Metal-cutting Saws for every machine.



## How to Put the Saw on the Machine

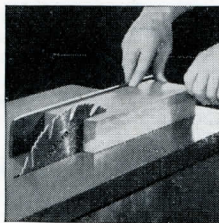
In putting the saw on the machine, make sure that the arbor hole in the saw fits the mandrel snugly and that the teeth of the saw point toward the operator.

Tighten the collar and nut securely on the mandrel to prevent the saw from wobbling in the cut or turning on the shaft.

See that the belt is tight enough. Slipping causes loss of power and makes the saw run unevenly. Before starting see that saw has ample clearance at sides and ends of table slot. To test this, rotate the saw by hand.

If table can be moved up and down, set it so cut will come as near center of saw as possible. This gives best cutting angle on saws up to 8", and lessens tendency of material to "ride" over the top of the saw.

Be sure you have enough speed and power to run the saw properly. Do not overload the motor. The average small motor runs 1750 revolutions per minute, and is usually belted to run the saw 3500 r.p.m. or more. Disston small circular saws are tensioned to run at a



speed of from 3000 to 4500 r.p.m. The greater speed with proper feed produces a smoother cut.

Observe the rules of Safety First. Always use a guard on the saw. If your outfit comes without a guard, you generally can buy one as extra equipment. Don't adjust table when saw is running.

In operating the saw, stand to one side, not back of, material to be cut. Hold down work with one hand, just ahead of other hand. Push work through with other hand. When gauge is close to saw, use a "push stick" notched on the end. Do not "crowd" the saw; if it binds, ease up on the feed.

If the saw still binds, examine the blade to see that it has the proper amount of set and is sharpened properly.

Get the right saw for your work: A Rip Saw for cutting with the grain, a Cross-Cut Saw for cutting across the grain, or a Combination Novelty Saw which cross-cuts, rips and miters. For all ordinary work a Combination Novelty Saw is the most convenient and useful, as blade need not be changed for ripping or cross-cutting.

## Refitting Small Circular Saws

### Jointing the Saw

The first step in refitting circular saws is jointing; getting all the teeth the same length. Joint the teeth by running the saw slowly backward by hand on the mandrel, while holding a piece of emery stone or a flat file, lightly against the tops of teeth. Continue until the tops of all the teeth show that they have been touched by the emery stone.

### Shaping the Teeth

After jointing, put the saw in the filing clamp and shape the teeth as near to the original style as possible. Have all the teeth of the same shape with gullets of even depth and width. Use a Disston 6" or 7" Taper File for cross-cut saws and combination novelty saws, and a Disston 6" or 7" Mill File, with one round edge, for rip saws.

### Setting the Teeth

After the teeth have been shaped, they should be set with a Disston No. 18 Triumph Saw Set. The saw should project fairly well above the clamp jaws. Place the die and anvil of the saw set on the tooth to be set, taking care not to carry the set down too far on the tooth. If this is done the body of blade (below the gullets) will be distorted. Be sure the tooth is being set in the correct direction. Follow the original set of your saw.

After setting, any teeth which are not in alignment with the others, should be corrected, either by the use of a file, if the set is too heavy, or by another application of the saw set.

This method of setting applies to all saws except hollow ground combination

novelty saws. The raker teeth of combination novelty saws should not be set, and no teeth (either scoring or raker) of of hollow ground combination saws should be set.

Some users prefer to set the teeth with a bevel-faced anvil and a hammer; but in all cases the principle is the same.

### Filing Small Circular Saws

After setting, file the teeth as nearly as possible in the same shape they were when new. You probably noticed, when your saw was new, that the teeth were beveled alternately; one tooth was filed or sharpened with the bevel on the right hand side and the next tooth had the bevel on the left hand side. They are filed in this manner to sever the fibres of the wood more easily. In resharp-ening, bevel the teeth as they originally were beveled.

Saws usually are sharpened for all around cutting. If your work is mostly in soft wood, you may carry a wider bevel on the teeth. In filing, do not reduce the length of the teeth; simply bring them up to a sharp point. If the teeth are uneven, the saw cannot cut properly. Have all teeth of the same shape, with gullets of even depth and width.

Do not file sharp corners or nicks in the bottom of the gullets. This usually results in cracks in the gullets.

Bevel the teeth in cross-cut saws on both the face and back edges. More bevel, however, is filed on the face than on the back of the tooth.

Give a rip saw a very slight bevel on the back of the tooth and a wider bevel, say 8 degrees, on the face. In filing any saws, take care that the bevel does not run down into the gullets. The bevel on both the face and back should be about one-third the length of the teeth. In filing a flat-ground combination saw, which cross-cuts, rips, or miters, use the same method for beveling the scoring teeth as is used in sharpening a cross-cut saw. The combination novelty saw has rakers, or cleaner teeth, to remove the material left in the cut by the beveled cutting teeth, hence the points of these rakers or cleaner teeth should be filed  $\frac{1}{32}$ " shorter than the points of the beveled cutting teeth. After filing to  $\frac{1}{32}$ " shorter, then also file these rakers

square across so they will act like a plane and present a chisel-like edge.

In sharpening a hollow-ground combination novelty saw, follow the same method as used with a flat-ground combination novelty saw, but do not set the teeth, as ample clearance is given by the hollow-grinding.

## TOOLS FOR REFITTING SMALL CIRCULAR SAWS

### Disston Taper Files



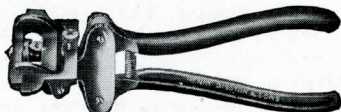
Best adapted for filing teeth of cross-cut and combination novelty saws. Use 6" or 7" size.

### Disston Mill Files One Round Edge



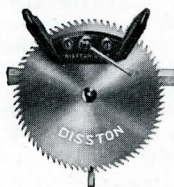
Will give best service for filing rip saws. Use 6" or 7" size.

### Disston Triumph Saw Set

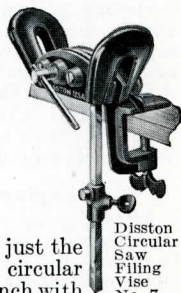


The No. 18 Triumph Saw Set gives a perfect set on small circular saws. The best tool for the purpose.

### Circular Saw Filing Vise No. 7



Saw in Vise



Disston  
Circular  
Saw  
Filing  
Vise  
No. 7

Handy, well-built, just the tool for filing small circular saws. Fastened to bench with thumb screw; elbow joint tilts vise to any angle. Place saw on movable bracket. Thumb screw raises or lowers saw to correct position for filing. Curved jaws grip rim of saw





## How to Choose and Use Narrow Band Saws

You want a band saw that will cut *Fast, Easy, Smooth, True.*

Disston Band Saws will meet your requirements, because—

*The Disston Steel* made especially for these narrow band saws, is of proper hardness and toughness to take and hold a keen edge longer than any other band saw. It is of sufficient resiliency to withstand the constant strain and bends, reducing gullet cracks to a minimum.

*The Blades* are straight and true.

*The Teeth* have correct pitch, size, depth, spacing and set for the work they are intended to do.

Thousands of wood workers testify to the splendid cutting and wearing qualities of DISSTON Narrow-Band Saws.

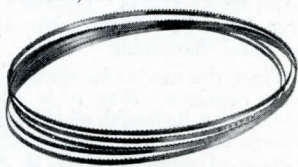
### "Thin-Gauge" Band Saw

Disston has perfected a band saw of special steel that is thinner than standard, for use on the band saw machines with small diameter wheels.

"Thin-Gauge" it is called. Specially hardened and tempered to withstand the severe bending strain.

On wheels 12", 16" or 20" in diameter

Disston  
"Thin-Gauge"  
Band  
Saws  
will give  
longer,  
better  
service.



Disston Narrow Band Saw

Disston makes narrow band saws for cutting thin metal, bone, ivory, fibre, meat, etc.

### Dimensions Disston Narrow Band Saws

Width of Blade	Standard Points Per Inch	Gauge
$\frac{1}{4}$ inch	7	22
$\frac{3}{8}$ inch	6	22
$\frac{1}{2}$ inch	5	21
$\frac{3}{4}$ inch	4	21
1 inch	4	20

### How to Use Your Band Saw to Get the Best Results

See that band saw is not too wide for the cut to be made. Use narrow saws for sharp curves and angles. Be sure your saw is sharp and has sufficient set to prevent it from binding.

Wheels should be clean and run true. Strain blade over wheels to give correct tension, so saw will not slip. Guide wheel must turn freely; it should not press too hard against blade.

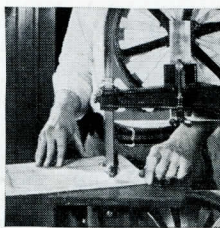
Close guard door over the upper wheel. Set guides just high enough to clear work to be cut. Get full speed before starting cut. Follow outside of line marked on work; leave line on the finished piece.

In cutting curves, use one hand as pivot and turn work with other hand. Never try to pick pieces of wood out of the table slot while saw is running. In backing out of cut, don't twist saw.

### How to Refit Narrow Band Saws by Hand

Those who do not have an automatic filing machine may sharpen narrow band saws by hand. Disston's Adjustable Band Saw Clamp, No. 4 is used for hand sharpening.

Place the saw to be sharpened on a long bench so that it is supported throughout its length on the same level during filing. The clamp will hold a section of approximately 50 teeth at one setting. The saw is then moved so that one section after another is worked on until the entire length of the saw has been sharpened.



Proper way to hold work

It is usual to "joint" these sections lightly before beginning to file the teeth. This is done by lightly rubbing a flat file across the tops of the teeth to make them all of a uniform height. "Jointing" will also assist as a guide in filing, as explained later.

Before starting to file, consider the shape of the teeth shown in Fig. 1.

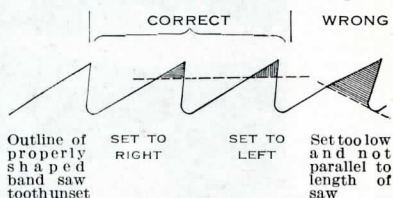


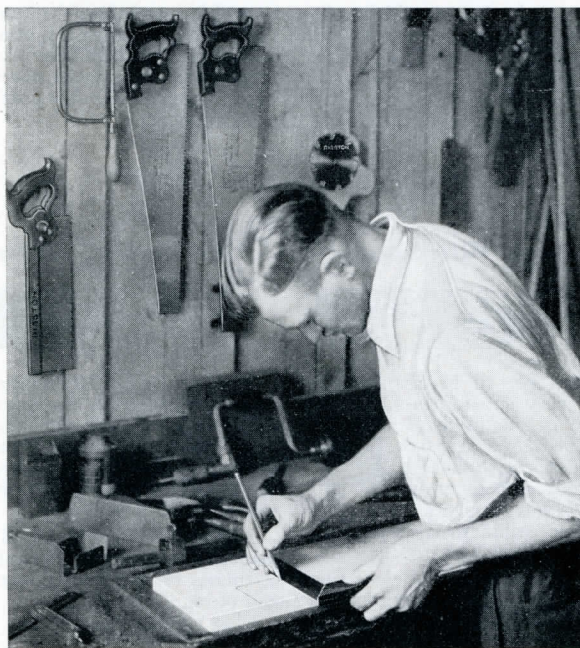
Fig. 1—Proper shape setting of narrow band saw teeth

Keep the teeth on your saw to this shape. Use a 6" regular taper file for all band saws of less than 6 points per inch; a slim taper for all of 6 points or more per inch. Place the file in the gullet between the teeth and allow it to find its own bearing against the teeth it touches. Hold the file in a horizontal position. File straight across the saw (at right angles to the blade, raising your file on the back stroke).

If the point of any tooth is not brought up sharp after the stroke of the file, do not do extra filing to sharpen this particular tooth. Instead, continue until you have filed the section you are working on. By this method, each section may require two or three "goings-over."

Teeth may be set with a Disston Triumph No. 28 Saw Set, in the same way that hand saw teeth are set. When setting is necessary, it should be done before the teeth are filed. It should be remembered that if the saw is to do only straight line cutting, best results are obtained by the least set possible. In this connection, remember that sufficient set is necessary to clear the blade in the cut, particularly when cutting on curved lines.





## How to Choose and Use Try Squares and Bevels

The Try Square is a laying out and testing tool. It serves as a guide in marking lines at right angles to any straight edge or flat surface. It determines whether surfaces or edges are square with adjoining surfaces, or edges; serves as a straight edge to test surfaces.

In doing a piece of work, it is well to go about it in a systematic manner. When it is necessary to reduce the various pieces in a job to some definite thickness, width and length, or to cut to some particular angle, take your square or bevel, and with a scribe, pencil, or sharp knife, draw a line on the stock to dimensions desired. (See illustrations on page 27.) Saw or plane to these lines and you will have a neat, perfect-fit job.

The craftsman who is particular with his work finds many uses for Disston squares and bevels, because they are absolutely true, have accurate rule on square blade, graduated to eighths inches, and durable stocks; in addition, the sliding T-Bevels have a positive locking device.

Squares must be perfectly square. That's the way Disston makes them. Disston squares will give you the best service in accuracy and wear.

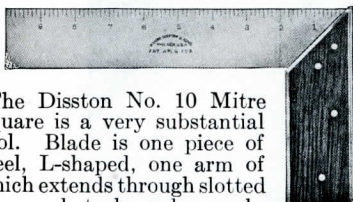
The Disston Mitre Square is made with an L-shaped piece of Disston Steel. The upper end of stock is cut at a 45 degree angle for marking mitres.

Bevels are closely related to squares. They are sometimes called bevel squares.

In laying out work, they provide a reliable means of duplicating any angle, by locking the blade on stock at angle desired. Blades on Disston bevels are also made of Disston Steel, perfectly true on both edges, and slotted to move

to and fro on bolt of locking device in end of stock, for setting at any desired angle. Some of the Disston Bevels are made with rosewood stocks, others with metal stocks. They will give you excellent service.

### Disston No. 10 Mitre Square



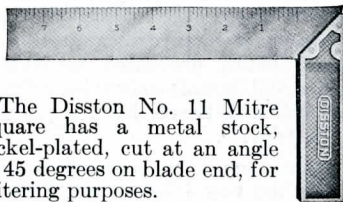
The Disston No. 10 Mitre Square is a very substantial tool. Blade is one piece of steel, L-shaped, one arm of which extends through slotted rosewood stock, and securely fastened with heavy rivets, making it practically impossible for the square to get out of true.

The Disston Steel blade, bright finished, is machined parallel; graduated eighths of inches from stock to end of blade.

Rosewood stock, inside edge brass plated; blade end cut at an angle of 45 degrees for mitering purpose.

Lengths of blade 6, 7½, and 9 inches.

### Disston No. 11 Mitre Square

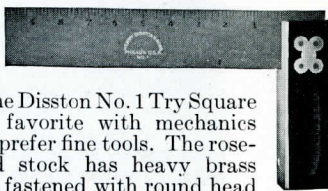


The Disston No. 11 Mitre Square has a metal stock, nickel-plated, cut at an angle of 45 degrees on blade end, for mitering purposes.

Bright Disston Steel blade—stiffened. Edges of blade machined parallel; graduated eighths of inches, both sides, from stock to end of blade; also made with metric graduations on both sides; or graduated inches on one side and metric graduations on other side.

Lengths of blade 4, 6, 8, 10, 12 inches.

### Disston No. 1 Try Square



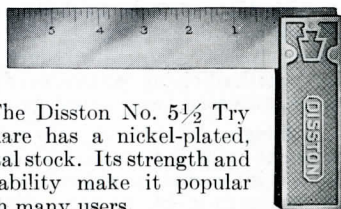
The Disston No. 1 Try Square is a favorite with mechanics who prefer fine tools. The rosewood stock has heavy brass face, fastened with round head counter-sunk screw. Grooved to form comfortable grip.

Disston Steel blade, blued, stiffened; machined parallel, is graduated eighths of inches on both sides from stock to end of blade.

The Disston No. 1 Try Square is made also with metric graduations both sides, or with metric graduations one side and graduated inches on other side of blade.

Lengths of blade 4½, 6, 7½, 8, 9, 10, and 12 inches.

### Disston No. 5½ Try Square



The Disston No. 5½ Try Square has a nickel-plated, metal stock. Its strength and durability make it popular with many users.

Disston Steel blade; bright—stiffened; machined parallel. Graduated in eighths of inches, both sides, from stock to end of blade; also made with metric graduations both sides, or with metric graduations one side and inch graduations other side.

Lengths of blade 4, 6, 8, 10, 12 inches.



### Disston No. 2 Bevel

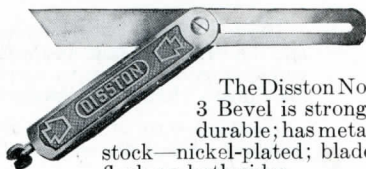


The Disston No. 2 Bevel has a genuine rose-wood handle, grooved to form a comfortable grip; fitted with heavy brass face plates—tapered toward blade on lever side, bringing the lever in line with handle, permitting bevel to lay flat on either of its sides.

Disston Steel blade, tempered; blued finish. Half of blade has slot to move on tightner bolt; is adjustable to any desired angle; one end of blade rounded; other end has a 45 degree angle.

Lengths of blade 6, 8, 10, and 12 inches.

### Disston No. 3 Bevel



The Disston No. 3 Bevel is strong, durable; has metal stock—nickel-plated; blade flush on both sides.

The blade is tightened or released by a patented ball-bearing mechanism controlled by a thumb screw at butt of stock; a quarter turn of the thumb screw locks the blade in place; will not work loose or slip.

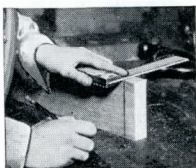
Blade of Disston Steel, bright finish; tempered. Slot, practically  $\frac{1}{2}$  the length of the blade, permits placing blade at any angle desired. One end of blade is rounded, other end cut at an angle of 45 degrees.

Lengths of blade 6, 8, and 10 inches.

## Suggestions for Using Squares and Bevels

### Layout from Face Across Edge

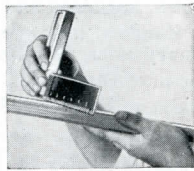
Hold the square by the fingers and thumb of the left hand so that the stock lies along the edge of the material that is being squared. For work of accuracy, a sharp-pointed knife is better than a pencil for marking.



Layout from Edge Across Face

### Testing Surface

In testing a surface to determine if it is a true plane, place the stock of gauge upright and slide the back of the blade along the surface of the material as shown in illustration.



Testing Surface

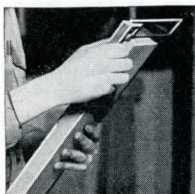
### Method of Setting Angles with T-Bevel



Laying Out Angle from Edge Across Face with T-Bevel

With the Disston T-Bevel it is possible to secure any degree of angle. After the angle is determined, hold the stock against the edge and adjust it so the lower edge of the blade meets the line, — then tighten the wing-nut and the bevel is set.

Using the stock for a rest, the bevel may be placed along any edge and the angle marked with pencil, scribe, or sharp-pointed knife.



Truing End from Edge

### Truing End from Edge

The material to be tested, if of convenient size, should be held in the left hand, and the stock of square placed against the one surface in order that the line

of light between the surface being tested, and the blade, may show any area which is not square to the other face. It is impossible to make a good job unless all your material is square.

## Disston Screw Drivers

Disston makes several styles of screw drivers in various lengths and diameters of blade and with different patterns of handles which will give good service to carpenters, cabinet-makers, electricians, machinists, chauffeurs, jewelers, and the handy man.

The blades are of Disston Steel, hardened and tempered; nicely polished. Tangs are securely fastened—no turning in handle.

All handles are made of hardwood, turned smoothly, and finished in various colors.

### No. 15 Screw Driver



The Disston No. 15 Screw Driver, also known as the Electric Pattern, is well made. The tang is securely fastened in the handle, and a pin through the ferrule, handle, and tang, prevents blade from turning in the handle. It is a good screw driver for shop, garage and the heavier work around the home.

Blade of Disston Steel, round; bright finish; hardened and tempered.

Handles, hardwood, round, stained cherry color, nickel-plated ferrule.

Lgth. of Blades 2 3 4 5 inches

Diam. of Blades  $\frac{7}{32}$   $\frac{7}{32}$   $\frac{1}{4}$   $\frac{9}{32}$  inches

Lgth. of Blades 6 8 10 12 inches

Diam. of Blades  $\frac{5}{16}$   $\frac{3}{8}$   $\frac{3}{8}$   $\frac{3}{8}$  inches

### No. 30 Screw Driver



The Disston No. 30 Screw Driver, also known as the Telegraph Pattern, is well made throughout, and will stand up to the work. Pin through ferrule, handle, and tang holds blade rigidly in handle.

Blade of Disston Steel—round; bright finish; hardened and tempered.

Handle of hardwood; black finish; nickel-plated ferrule.

Lgth. of Blades 2 3 4 5 inches

Diam. of Blades  $\frac{7}{32}$   $\frac{7}{32}$   $\frac{1}{4}$   $\frac{9}{32}$  inches

Lgth. of Blades 6 8 10 12 inches

Diam. of Blades  $\frac{5}{16}$   $\frac{3}{8}$   $\frac{3}{8}$   $\frac{3}{8}$  inches

### No. 31 Screw Driver



The Disston No. 31 Screw Driver, also known as the Telegraph Cabinet Pattern, is adapted for light cabinet work, for small work around the home, etc. It is similar to the No. 30, only made for lighter work.

Blade of Disston Steel, round, bright finish; ground to enter slot of small screws.

Handle of hardwood; round, black finish; nickel-plated ferrule. Pin through ferrule, tang, and blade prevents blade from turning in the handle.

Lgth. of Blades 2 3 4 5 inches

Diam. of Blades  $\frac{3}{16}$   $\frac{3}{16}$   $\frac{3}{16}$   $\frac{3}{16}$  inches

Lgth. of Blades 6 inches

Diam. of Blades  $\frac{3}{16}$  inches

### No. 21 Midget Screw Driver



The No. 21 Disston Midget Screw Driver was designed for light work.

Made in three sizes— $1\frac{1}{2}$ , 2 and 3 inches. Just the screw driver one needs to fix locks, clocks, door-knobs, drawer-pulls, typewriters, light fixtures, sewing machines, etc. Everybody's tool kit should contain them.

Has nickel-plated blade made from Disston Steel, specially hardened and tempered, and is ground sufficiently keen to fit the slot of a small screw. Ribs are pressed out from the tang which prevents turning in the handle.

The handle is made from applewood, neatly shaped; reinforced by a ferrule.



## How to Choose and Use Gauges

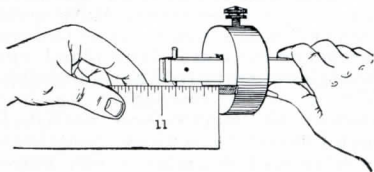
Much work in wood requires a gauge for marking lines parallel to straight working surfaces, and to provide a straight line to guide planing or sawing; also a mortise gauge to lay out mortises, tenons, etc.



Scribing with a Marking Gauge

When gauge does not have rule on beam, set and test with foot rule (see illustration). Hold the head of the gauge firmly against the front edge of stock and score on the face side of it. Usually the gauge is pushed from you so that the spur and line are visible.

A Disston Marking or Mortise Gauge is a credit to any craftsman's tool kit. They are made from boxwood and rosewood; built for wear and accuracy in marking. They have a beautiful finish. All heads of Disston Gauges are oval-



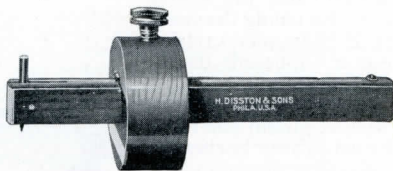
Plain Beam Can Easily be Set with Rule

shaped for comfortable grip. Some of the beams have graduated inches, others are plain. Some are adjusted with knurled set screws, others with wingnut screws—a variety of styles.

The No. 83 Cutting Gauge and the No. 90 Mortise Gauge are the most popular of the Disston line.

### Disston No. 83 Cutting Gauge

The Disston No. 83 Cutting Gauge is made from hardwood, lacquered; oval-shaped head for comfortable grip. The



stem is plain—not graduated. The cutting pin, through stem, is adjustable and so shaped as not to follow grain of wood when used; held in position by a flat-head, countersunk screw. The head of a brass screw, placed on end of stem, prevents head from sliding off.

A knurled-head adjustable screw bears against a brass plate in the beam and prevents wear. A brass plate,  $\frac{1}{4}$  inch wide, placed across the face of the head, also prevents wear.

Dimensions of stem,  $8\frac{1}{2} \times 1\frac{1}{16} \times 1\frac{1}{16}$  ins. Dimensions oval-shaped head,  $2\frac{1}{8} \times 2\frac{1}{2} \times 1$  ins.

### Disston No. 90 Mortise Gauge



Side View of Stem



Stem Showing Brass Plates with Movable and Stationary Pins

The Disston No. 90 Mortise Gauge is made of hardwood, lacquered. A fine, well-made tool. The head is oval-shaped for a comfortable grip.

Stem is not graduated. Knurled head thumb-screw in end of stem adjusts the scoring pins. The head is adjusted on stem by a knurled-head thumb-screw which bears against brass plate in head.

Dimensions of stem,  $6\frac{1}{2} \times 1\frac{1}{16} \times 1\frac{1}{16}$  ins. Dimensions of oval-shaped head,  $2\frac{1}{8} \times 2\frac{1}{2} \times 1$  ins.

## How to Choose and Use a Plumb and Level

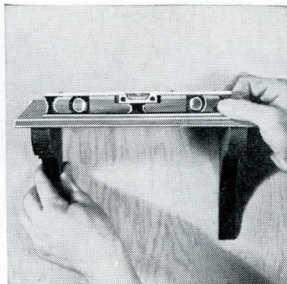
Carpenters, masons, farmers, mechanics of all kinds, need Plumbs and Levels—also the handy man, for truing the clock shelf, stove, piano, refrigerator, cupboards, doors, floors, etc.

Disston makes just the style of plumb and level suited to your particular job—all styles and sizes, and they are accurate and dependable in every respect.

The wooden levels are made from straight-grained hardwoods, carefully selected, air and kiln dried. Some of them have the fixed or locked-type level and plumb

glasses, others have the adjustable type, which may be adjusted should rough usage or climatic conditions alter their accuracy. All glasses are proved—have two lines scored in the glass. When the bubble in the glass is in center of these lines the work is perfectly true or plumb. All Disston Levels made from wood have both sides corrugated to afford sure grip.

The Disston aluminum alloy Featherweight Levels are the lightest weight levels on the market, yet exceptionally strong.



Leveling Shelf with Disston A-10 Level

### Disston No. 255 Plumb and Level

The Disston No. 255 Plumb and Level will be a credit to any mechanic's kit. Rosewood stock, nicely finished, showing the beau-



tiful grain of the wood. Sides are grooved for sure grip.

The top plate is nickel-plated.

Both plumb and level glasses are proved.

Length, 10 inches; depth, 1  $\frac{1}{8}$  inches; width,  $\frac{15}{16}$ -inch.

### Disston No. A-10 Level



The Disston No. A-10 Featherweight Level is a very handy tool for all kinds of leveling. Can be carried in pocket; will not rust or corrode. Made from an all-aluminum alloy, same material as used in airplane construction; light in weight, but strong. Tapers from center to both ends; glasses are proved; top plate polished, lower plate and edge natural finish; center of frame japanned.

Length	Width at Center	Depth	Weight Each
9 inches	$\frac{9}{16}$ inch	1 $\frac{1}{8}$ inch	2 ounces

The Disston No. A-12 Featherweight Level is the same as the No. A-10, except it is 12 inches long.

### Disston No. 16 Plumb and Level



The Disston No. 16 Plumb and Level is a very popular number. It has given complete satisfaction to carpenters and mechanics for years. Both plumb and level glasses are proved, and adjustable. The stock is thoroughly seasoned cherrywood, stained and varnished; arch top plate; side views. Solid brass ends protect it against rough usage; corrugated sides to afford sure grip.

Made in the following dimensions:

Lengths	Depths	Widths
24 inches	3 inches	1 $\frac{5}{16}$ inches
26 inches	3 inches	1 $\frac{5}{16}$ inches
28 inches	3 $\frac{1}{4}$ inches	1 $\frac{5}{16}$ inches
30 inches	3 $\frac{1}{4}$ inches	1 $\frac{5}{16}$ inches



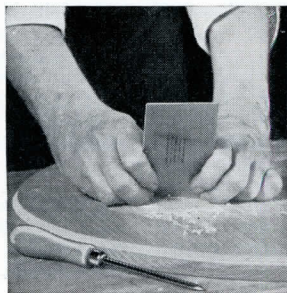
## How to Choose and Use Cabinet Scrapers

Cabinet Scrapers play a much more important part in cabinet-making, hardwood floor finishing, and in smoothing wood surfaces in general, than their plain appearance would indicate. In fact, when properly edged, or sharpened, and correctly handled, they are very useful and efficient tools.

Scrapers are used, principally, for smoothing a surface after it has been planed. Cross-grained and highly figured woods must always be scraped. As they can be planed only across the grain, the only tool that can be employed for smoothing them is a scraper. Veneers, generally, are not planed, but scraped.

A mistaken idea prevails that scrapers should remove fine dust, only. If properly sharpened, they will actually plane—remove a fine shaving.

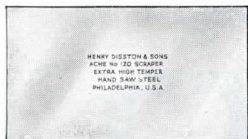
In use, the scraper may be either pushed or pulled. When pushed, the scraper is held firmly in both hands, the fingers on the forward and the thumbs on the back side. It is tilted forward, away from the operator, far enough so that it will not chatter and is bowed back slightly, by pressure of the thumbs, so that there is no risk of the corners digging in. When pulled the bow and angle of blade are reversed.



Proper Way to Hold Cabinet Scraper

The Disston Line of Cabinet Scrapers comprises various styles and sizes, all made from the famous Disston Saw Steel, even gauge throughout, and ground to a perfectly smooth surface. They can be used by hand, in holders, and in scraper planes. The blades are edge-holding, made with either straight cut edges, or with edges dressed and ground, ready to be burnished.

### Disston No. 120 Acme Cabinet Scraper

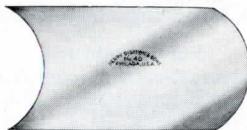


The Disston No. 120 "Acme" Cabinet Scraper is made of extra high-tempered hand saw steel with "dressed" edges and true flat surface. It is the finest and best scraper made. Used by hand, in holders, and in scraper planes. Each scraper is packed in individual glassine envelopes. Made 18, 19, and 20 gauge thick for regular work; 21, 23, and 26 gauge thick for work requiring flexible scrapers—for floor layers, cabinet-makers, golf professionals, etc. Sizes, 18, 19, and 20 gauge, inches: 2 x 4, 5, 6; 2½ x 5, 6; 3 x 4, 5, 6; 2⅞ x 5, 6.

### Disston No. 20 Cabinet Scraper

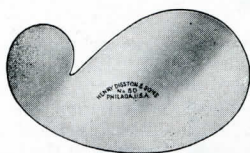
The Disston No. 20 Cabinet Scrapers similar in shape to the No. 120, are made of hardened and tempered Disston Steel; plain edges; easy to burnish; 20 gauge thick; for use by hand or scraper planes. Sizes, inches: 2x4, 5, 6; 2½x4, 5, 6; 3x4, 5, 6; 3½x6; 4x5, 6.

### Disston No. 50 Cabinet Scraper



Known as the "French Pattern". Made of Disston Steel—two straight edges, also concave and convex curves for joinery, cabinetmaking and pattern work. Nineteen gauge. 2½" x 5". Edges dressed. They are uniformly hardened, and capable of taking a smooth cutting edge by use of the burnisher.

## Disston No. 40 Cabinet Scraper



Known as the "Swan Neck Pattern", this scraper is very handy and efficient for concave curves in pattern and cabinetmaking. The peculiar shape adapts it for use on curved surfaces of varying degrees. They are made of Disston Steel and are uniformly hardened. The edges are dressed. Nineteen gauge. Size 3" x 5".

## Disston Cabinet Burnishers



Disston Cabinet Burnishers are made in four different patterns. All blades are of highly polished Disston Steel; will turn the edge of cabinet scrapers and other edged tools without defacing the burnisher.

Round hardwood handle, shaped for comfortable grip; varnished; nickel-plated ferrule.

### Blade Length

No. 0 Oval—heavy.....	6 inches
No. 1 Oval—light.....	4½ inches
No. 2 Round.....	4½ inches
No. 4 Square—rd. pt., not cut.....	4½ inches

## Sharpening Cabinet Scrapers

### For Square Edge Scraping

Some Cabinet Scrapers are supplied with "dressed" edges, ready for use; others with plain edges which must be dressed before using. In dressing an edge:

- 1—Place scraper in vise and draw-file all edges at right angles to face of scraper; see Fig. 1. This operation will give you a perfectly square but rough edge.
- 2—Run smooth-cut file backward and forward along the edge of scraper (holding the file vertical to the scraper's face), until the edge is smooth.
- 3—Lay scraper flat on oil stone and rub until all edges are sharp.

N.B. In refitting "dressed" edged scrapers, follow these instructions also.

### For Finishing

To put a fast-cutting edge on a Cabinet Scraper it must be filed to a 30-degree bevel, similar to a bevel on a chisel. Next, place scraper in a vise and run a burnisher along the keen edge, in line with the edge—first at an 8 to 10 degree angle, and finally at about a 15 degree angle. See Fig. 2. Then an oil stone should be run along the edge to make it smooth. This puts a "hook" on the edge which cuts, or shears off the fiber ends that project from the wood

after square scraping, and makes a very smooth surface.

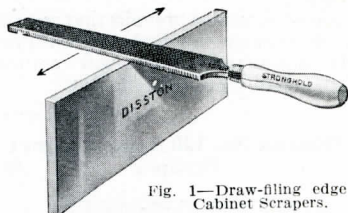


Fig. 1—Draw-filing edge of Cabinet Scrapers.

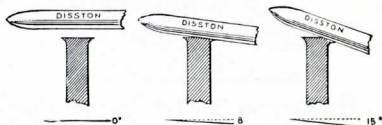
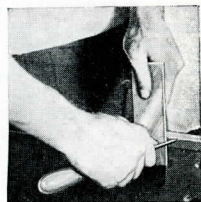


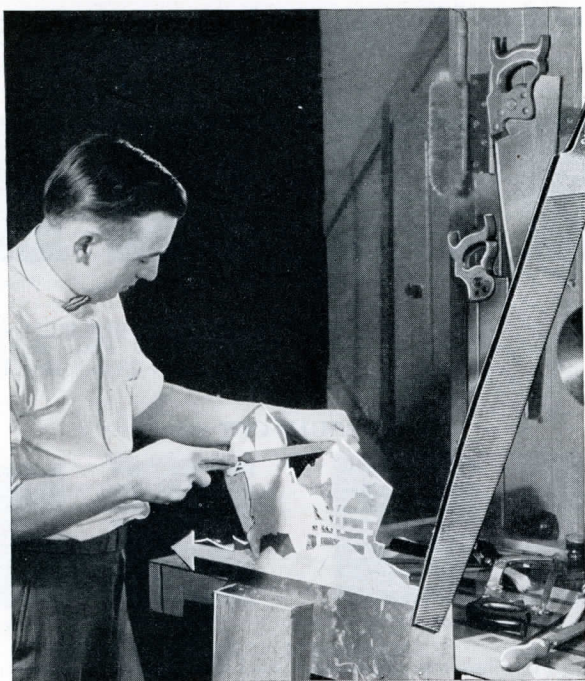
Fig. 2—Turning the edge of a Cabinet Scraper, using 4½-inch Oval burnisher No. 1.

In this manner the steel is first pressed out from the edge, then tipped over slightly, and finally bent at about 15 degrees from the edge on both sides. This is shown in Fig. 2.

Some experienced workmen sharpen the scraper by holding it vertical on the bench surface and drawing the burnisher up the edge, toward them, as in Fig. 2.







## How to Choose and Use Files

The file is one of the most universally used tools made. There are so many and varied uses for files that every tool kit should contain several styles.

Disston makes the best and most complete line of files—they cut faster and last longer. Every operation, from the making of the uniform, hard, tough steel to the shipment of the file, is made in the Disston Factory under personal supervision of experts.

Disston Files are of correct patterns; have clean, strong, sharp teeth, which are cut at correct angles, and are uniform in width and depth. Improved heat treatment gives unusually long life to them; rigid inspection assures every file a perfect file.

Disston makes more than 250 styles, and more than 1,000 different cuts and sizes. In selecting a file, the shape,

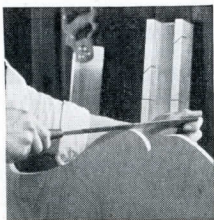
length, and cut must be considered.

The length of a file is measured from the heel (or where the tang begins) to the point.

Shapes are classified as flat, hand, round, half-round, mill, square, three-square, and many special shapes.

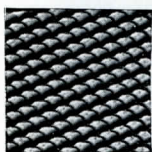
"Cut" means kind or character of teeth in the file—single cut, double cut,

rasp cut; and the degree of coarseness or fineness of teeth — bastard, second cut, smooth. A few files are made coarser than bastard—known as rough and coarse.



## Illustrations Showing the Different Cuts of Files

### DOUBLE CUT



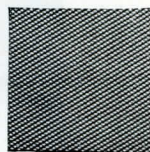
Rough Cut



Bastard Cut



Second Cut



Smooth Cut

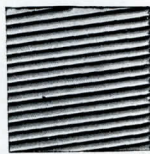
Double Cut File—has two courses of teeth or chisel cuts crossing each other, one course being finer than the other.

Double Cut is used on all Machinists' files, such as Flat, Hand, Square, Round (10 to 20 in.), Half Round, etc.

### SINGLE CUT



Rough Cut



Bastard Cut



Second Cut

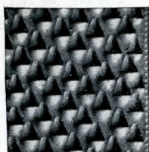


Smooth Cut

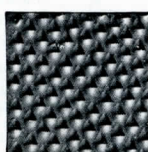
Single Cut File—has one unbroken course of teeth or chisel cuts across its surface, parallel with each other, but at an oblique angle to the length of the

file. The single cut is used on all Mill Files, on the various Taper Saw Files, and also on Round Files up to and including nine inches in length.

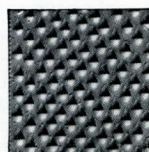
### RASP CUT



Bastard Wood  
Rasp



Second Cut  
Cabinet



Smooth  
Cabinet

Rasp Cut—differs from both single cut and double cut in that the teeth are not placed in parallel rows across the file, but each tooth is put in separately

by a single pointed tool or punch. Rasp cut files are used by blacksmiths, plumbers, cabinet-makers, wood-workers and others, for rough work.

**NOTE**—All regular files have an accepted standard character of teeth; for instance, all regular Flat, Half Round, Round (10 to 20 inches), Square and other machine shop files, are Double Cut. All regular Mill Saw, Taper Saw, and other Saw Files, are Single Cut.



## A Few Styles of Disston Files

*Disston makes more than 250 styles, and more than 1000 different cuts and sizes, including Superfine Files.*

### Special Extra Slim Blunt Saw File



This File is made blunt to assist the unskilled filer in making a level, uniform stroke. Designed especially for filing saws. It is a three-cornered blunt file with teeth on three sides and edges. Has unusually long sweep for its length; made in 5, 5½, 6 and 7 inches.

### Taper (Single Cut)



The principal use of taper files is for filing saws. Made in 3, 3½, 4, 4½, 5, 5½, 6, 7, 8, 10, 12-inch lengths. Disston also makes Slim, Extra Slim and Double Extra Slim Taper Files for the same purpose.

### Mill (Single Cut)



The Mill File is most generally used in the bastard cut. It is tapered in both width and thickness. Used for lathe work and draw filing by mechanics, and for sharpening one and two-man cross-cut saws, lawn mower blades, garden tools, and other edged tools.

Made with square edges, one round edge, and two round edges; mill blunt. The Mill File, bastard cut, made 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18 inches in length.

### Round (Single Cut) up to 9 inches

### Round (Double Cut) 10 to 20 inches



Round Files are made both tapered, and blunt. Used mostly for making round holes larger. Made in bastard, second and smooth cut, in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18-inch lengths; also 20-inch length in bastard.

### Flat (Double Cut) For Wood; For Metal



Flat Files are tapered both in width and thickness. One of the most frequently used files for many kinds of work. Some flat files are cut for wood filing, and others are cut for metal filing. Made bastard, second cut and smooth in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18-inch lengths, and also 20-inch in bastard.

### Square (Double Cut)



Square Files are made both tapered and blunt. Used principally by mechanics for enlarging rectangular holes. Made in bastard, second cut and smooth, in 4, 5, 6, 7, 8, 10, 12, 14, 16, 18-inch lengths, and also in 20-inch length in bastard cut.

### Half Round For Wood; For Metal



Half Round Files are made for both wood and metal filing. The Half Round Cabinet File is made in second cut in 6, 8, 10, 12, 14-inch lengths. Half Round Wood File is made, bastard cut, 4, 5, 6, 7, 8, 10, 12, 14, 16, 18 inches.

Half Round Files for Metal are made in 4, 5, 6, 7, 8, 10, 12, 14, 16, 18-inch lengths in bastard, second, and smooth cut.

The Half Round Cabinet Rasp, for coarse filing, is made in second and smooth cuts, 6, 8, 10, 12, 14, and 16-inch lengths.

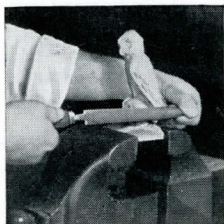
*Disston's improved heat treatment gives unusual life to the files. Rigid inspection assures every file a perfect file.*

## In Using a File—

1. Be sure that the material to be filed is securely fastened. Loose work permits the file to chatter, thereby distorting the edge of the teeth.
2. In placing the handle on the tang of the file, do not hit the end of the file to drive it into the handle. Push the handle on, and holding the point of the file up, tap the butt end of the handle on the bench to drive the tang into place.
3. Do not exert undue pressure while filing but keep the file engaged in the cut to avoid glazing, which distorts the keenness of the teeth.
4. Never allow a file to slip over the work. This dulls the teeth.
5. Be sure to raise the file slightly during the return stroke in order to clear the work and prevent dulling by wearing away the back of the teeth, thus destroying the cutting edges. This does not hold true in the filing of soft metals, such as lead, aluminum, etc. The correct procedure in this case is to draw the file back along the metal on the return stroke as an aid in cleaning the teeth.
6. If the file is not cutting and you find that the spaces between the teeth are choked, you should use a DISSTON file card and brush. Never tap the file to clear its gullets of clogged material. This may break the teeth.
7. On completing your work, do not throw the file on the bench. Lay it down with all the degree of respect that is due a quality tool. Remember that to do their work effectively, files must be made as hard as fire and water can make them. Consequently the teeth may be chipped by rough handling.

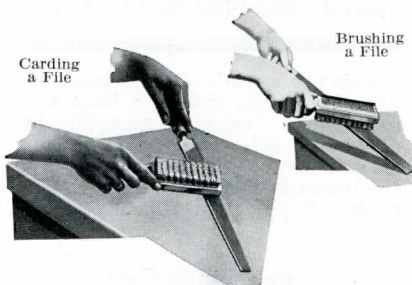
Files for the Metal Worker

Every kind, size and style. A Disston 8-inch Mill File, bastard cut, is fine for sharpening axes, lawn mowers, garden tools, and general work in the home and shop. Excellent for finishing metal surfaces.



## Disston File Card and Brush

Lengthens life of file; assures faster, better work. When a file is clogged a few strokes across its surface with a Disston File Card and Brush will clean out the gullets and allow the file to cut



into the metal. The card wire is fine enough to enter a fine-tooth file and loosen clogged chips and dirt; brush cleans it out. Strongly built, light in weight; comfortable handle—face of card and brush, 5" x 1½", overall 9½".

## Disston Stronghold File Handles

Made from selected wood, in five different sizes. Shaped for comfortable grip; smooth, sanded surface. Ferrule end is slit to allow for expansion and contraction when tang is inserted or removed.



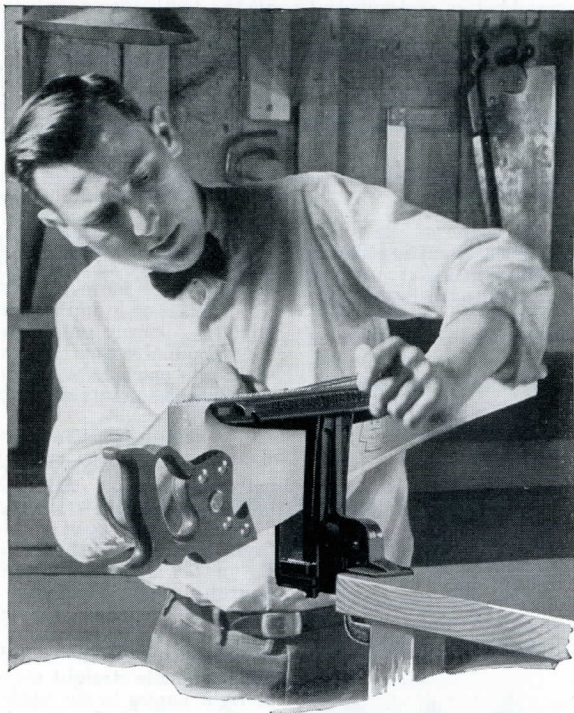
The outstanding feature of the Stronghold Handle is the coiled spring-steel ferrule. It expands to allow the tang of file to enter the handle, and then holds it rigidly. No more loose files in the handles.

The coiled spring-steel ferrule and slit-end handle permit the use of several sizes of files to one handle. Replacing and removing files is easy.

Number of Handle	Length of Handle	Lengths of Files used in Handle
No. 1	4 inches	3 to 6 inches
No. 2	4¾ inches	6 to 10 inches
No. 3	4⅝ inches	10 to 12 inches
No. 4	5½ inches	14 inches
No. 0	6 inches	3 to 7 inches Taper Files

The No. 0 is a special handle used in the Disston Works for filing hand saws.





## How to Sharpen a Saw

A Disston Saw is a fine tool, accurately made by master-craftsmen and will give a life-time of service if properly handled. Use it as a fine tool should be used. When necessary to set and file it, follow these directions carefully.

Before starting work, read ALL the directions. Then, as you work, read them step by step.

Examine the tooth-edge of your saw to see if the teeth are uniform in size

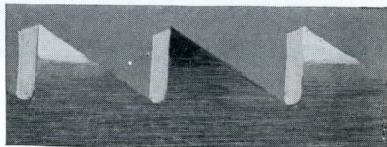


Fig. 2—Side View of Rip Saw Teeth

and shape and to see that they are properly "set."

It is not necessary to reset the teeth of a well-tempered hand saw every time it needs sharpening. If the teeth are touched up with a file from time to time as the saw is used (on the same principle as stropping a razor) the saw

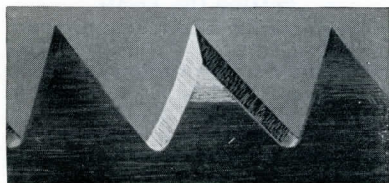


Fig. 1—Side View of Cross-Cut Teeth

will cut longer and better, and sufficient set will remain to enable the saw to clear itself. The proper amount of set is shown in Fig. 3.



Fig. 3—Looking from the back of a Saw. This shows how the teeth, when set, extend beyond the edge of the blade.

Now study the shape of the teeth. Teeth of saws for cross-cutting should be shaped like those in Fig. 1; teeth of saws for ripping same as in Fig. 2, page 37. A saw cannot give good service unless the teeth are even (of the same size and regular) and properly shaped.

If the teeth are uneven, it is necessary to "joint the saw" and "shape the teeth" in accordance with the following instructions:

### Jointing

(To be done only when the teeth are uneven or incorrectly shaped, as explained above.) Unless the teeth are regular in size and shape the set can never be regular and it is useless to attempt to regulate them without "jointing" until all are of equal height.



Fig. 4



Fig. 4A

Fig. 4 and 4A—Are photographic reproductions of actual condition of some saws returned to us. They are typical of the manner in which many saws are used and abused. It is best to have saws, such as these, retooled at the factory.

### To Joint a Saw

Place the saw in a clamp, handle to the right. Lay a mill file lengthwise on the teeth. Pass it lightly back and forth the length of the blade, on the tops of the teeth, until the file touches the top of every tooth. If the teeth of your saw are very uneven, it is best not to make

all the teeth the same height the first time they are "Jointed." In this case "Joint" only the highest teeth first, then "Shape" (see "Shaping the Teeth," below) the teeth that have been "Jointed," then "Joint" the teeth a second time, passing the file along the tops of all the teeth until it touches every tooth. The teeth then will be of equal height. Do not allow the file to tip to one side or the other.

The Disston Hand Saw Jointer, described on page 43, is made to help you do this work more accurately. This tool holds the file and is so made that it holds it squarely on the tooth edges. This eliminates any chance of tipping the file to one side or the other and so rounding the points of the teeth.

### Shaping the Teeth

(To be done only when the saw has been "Jointed.") After jointing, all teeth must be filed to the correct shape. The gullets must be of equal depth. The fronts and backs of the teeth must have the proper shape. The teeth must be uniform in size. (See page 37, Figs. 1 and 2, for shape. Disregard bevel, which will be taken care of later.) To do this, place the file well down in the gullet and file straight across the saw, at right angles to the blade (under no conditions hold the file at any other angle). If the teeth you are filing are of unequal size, press the file against the teeth having the largest tops, until you reach the center of the flat top made by "jointing."

Then move the file to the next gullet, and file until the rest of the top disappears and the tooth has been brought up to a point. Make no effort to bevel the teeth at this time.

The teeth, now shaped and of an even height, are ready to be set.

### Setting the Teeth

As mentioned before, you need not reset the teeth of a well-tempered hand saw every time the teeth need a light sharpening. If it is not necessary to "Joint" and "Shape the Teeth," examine the saw to see if the teeth have the proper amount of set indicated in Figs. 3 (this page), 5 and 6 (page 39). If they have proper set the saw is



ready for filing. If they do not, set them in accordance with the following instructions:

Note—It is always necessary to set the teeth when you have "Jointed" and "Shaped the Teeth" of your saw.

The teeth of a hand saw should be set before filing to avoid injury to the cutting edges.

*Purpose of Set.* The purpose of setting the teeth of saws, that is, springing over the upper part of each tooth (not more than the half of the tooth nearest the point), one to the right, the next to the left, and so on alternately throughout the entire tooth edge, is to make the saw cut a kerf slightly wider than the thickness of the blade. This gives clearance and prevents friction which would cause the saw to bind and pull hard in the cut.

*Depth of Set.* Whether the saw is fine or coarse, the depth of the set should not go, at the most, lower than half the length of the tooth. This is important. If deeper than this it is sure to spring, crimp, or crack the blade, if it does not break out the teeth.

A properly ground saw requires very little set, for the blade, being of uniform thickness along the entire tooth-edge, tapers thinner to the back and also tapers from butt to point, which provides a measure of the clearance necessary for easy running.

Soft, wet woods require more set and coarser teeth than dry, hard woods. For fine work on either hard or soft dry woods, it is best to have a saw with fine teeth and little set.

*Setting with Hammer and Anvil.* Setting can be done by the use of a special anvil, which has a slightly beveled edge over which the teeth extend. The points of the teeth, extending over this beveled edge, are given the set by striking each a quick blow with a light hammer, the force of which springs the point to the depth of the bevel on the face of the anvil. The

further over the bevel the point extends, the greater, of course, will be the depth of set. The teeth of a highly tempered saw may require several blows. They may break if you attempt to set them with too heavy a blow.

Setting by this method requires considerable skill and only by practice can the weight of the blow required be determined. This method is not recommended for the amateur.

*Setting with Sawset.* The general practice, outside of a saw factory, is to set the teeth with the use of what is termed the spring set—bending over the point of tooth by pressure with a special tool known as a sawset. Many so called sawsets are impractical; they give too deep a set, or the pressure is improperly applied. Recognizing this difficulty years ago, Disston invented and produced the Triumph Sawset and fully recommend it as a tool that will do this work properly. The Triumph Sawset is illustrated and described on page 43.

### Filing the Teeth

There are quite a number of shapes of teeth, varying in angle, bevel, etc., each adapted for special work such as cutting dry seasoned lumber, wet green lumber, soft woods, hard woods, etc., but the purpose of this article is to treat only on the setting and filing, or sharpening, of those hand saws ordinarily used, the teeth of which are alike, whether large or small. Everyone but the experienced saw user who knows from experience just what angles and bevels he prefers, should follow these rules exactly for best results.

*Necessary Equipment.* The only equipment necessary consists of a clamp and files. The clamp should be sufficiently strong to hold the blade firm enough to prevent chattering, and one in which the blade can be placed and tightened easily and quickly. The top of the clamp should be on line with the



Fig. 5  
End view cross  
cut Teeth



Fig. 6  
End view rip  
Teeth



operator's elbows for best working position.

Use the Disston Special Extra Slim Blunt Saw File. It has a special cut, plenty of bite, cuts fast and true. Extra slim, so you can see where and how you are cutting. Parallel sides—no taper, for a level, uniform stroke. Following table indicates length of Special Extra Slim Blunt Saw File to be used:

- 5 and  $5\frac{1}{2}$  point Cross-cut Teeth, 7-inch.
- 6, 7, 8 and 9 point Cross-cut Teeth, 6-inch.
- 10 and 11 point Cross-cut Teeth, 5-inch.
- $4\frac{1}{2}$ , 5,  $5\frac{1}{2}$  and 6 point Rip, 7-inch.
- 4 point Rip and coarser, 6-inch Taper Files.

To determine the "point" of a saw, count the number of tooth points to the

Stand at First Position, Fig. 8. Start at the point. Pick out the first tooth that is set *toward* you. Place file in the gullet to the left of this tooth. Hold file directly across the blade. Then swing the file handle toward the *left* to the desired angle. Correct angle is shown in Fig. 8.

Hold the file level and at angle shown in Fig. 8. Do not allow it to tip upward or downward. Be sure the file sets down well into the gullet. Let it find its own bearing against the teeth it touches. It will help the beginner if he will first observe the shape and bevel of some of the unused teeth that can most always be found near the handle-end of a saw. If these teeth are shaped as they

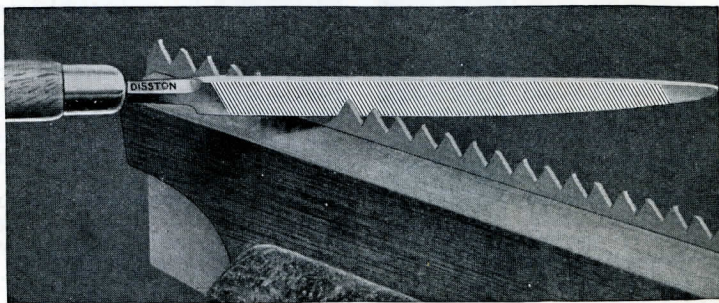


Fig. 7—File in position near Point of Saw

inch, measuring one inch from the point of any tooth. Note that there is always one more point to the inch than there are complete teeth to the inch.

Place the saw in filing clamp *with handle at right*. The bottom of the gullets should be  $\frac{1}{8}$  inch above the jaws of the clamp. If more of the blade projects the file will "chatter" or "screech." This dulls the file quickly.

It will assist you to file a saw properly, if at the start, you pass a file lightly down the tops of the teeth (just as instructed under "Jointing" page 38) to form a *very small* flat top on each tooth. The purpose of this is to provide a guide for filing. It does, however, again even up the teeth—which was the main purpose of "Jointing" explained on page 38. Now, file the teeth as instructed in the following paragraphs.

left the factory, they will serve as a guide.

The file should cut on the push stroke. It files the tooth to the left and the tooth to the right at the same time. File the teeth until you cut away one-half of the flat tops you made on the teeth as a guide, then lift the file from the gullet. Skip the next gullet to the right, and place the file in the second gullet toward the handle. Repeat the filing operation on the two teeth the file now touches, being careful to file at the same angle as before. Continue this way, placing the file in every second gullet, till you reach the handle-end of the saw.

Study Fig. 9 before you go further. Turn the saw around in the clamp, *handle to the left*. Take Second Position, Fig. 9. Place the file in the gullet to the right of the first tooth set *toward* you.

(This is the first of the gullets you skipped when filing the other side of the saw.) Turn file handle to the desired angle toward the *right*. Now file until you cut away the other half of the flat top made on the teeth as a guide, and the teeth are sharpened to a point. Continue this, placing file in every second gullet, till you reach the handle of the saw.

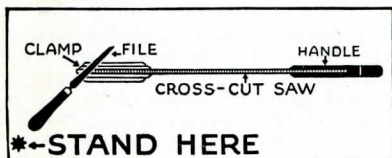


Fig. 8—First Position for Filing Hand Saws for Cross-cutting

### Filing Hand Saws for Ripping

With one exception, this method is exactly the same as that given for Cross-cut Saws.

This exception is that rip saws are filed with the file held *straight across* the

saw, at a right angle to the blade. The file should be placed in gullet so as to keep the 60° angle on the front of each tooth as explained on Page 6 in description of Rip Saw teeth.

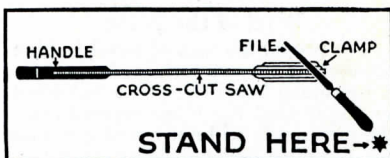


Fig. 9—Second Position for Filing Cross-cut Saws

Place saw in clamp with handle toward the right. Start at the point. Place the file in the gullet to the left of the first tooth set toward you.

Continue, placing file in every second gullet, and filing straight across. When handle of saw is reached in this way, turn saw around in the clamp. Start at point again, placing file in first gullet skipped when filing from other side. Continue again in every second gullet till handle-end of saw is reached.

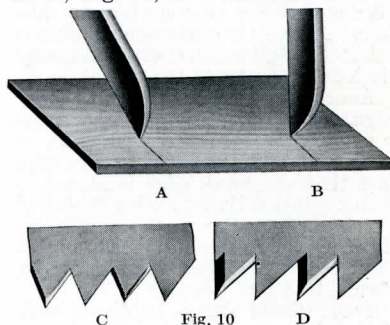
## Proper Shape and Angle of Saw Teeth

Some additional information about the angle of the teeth in saws for cross-cutting may be of use. The angle of the tooth is one of the most important features and too much care cannot be taken to have the correct angle for the duty required.

To illustrate this, the accompanying picture represents a board, across which we wish to make a deep mark with the point of a knife. Suppose we hold the knife nearly perpendicular as at B, Fig. 10. It is evident that it will pull harder and will not cut as smoothly as if it were inclined forward as at A, Fig. 10. It follows, then, that the cutting edge of the cross-cut saw should be at an acute angle as at C, Fig. 10, rather than stand perpendicular as at D, Fig. 10.

Too much angle and too heavy a set are very common faults, not only detrimental to good work but ruinous to the saw. The most common angle used is 60 degrees, though this may be varied a little more or less to advantage as the

user becomes more expert. When a saw has a large amount of hook or pitch, as at D, Fig. 10, it often takes hold so



keenly that frequently it "hangs up" suddenly in the thrust—the result, a kinked or broken blade. When there is too much set, the strain caused by the additional and unnecessary amount of set is out of proportion to the strength of the blade, and teeth are sometimes broken.



In filing saws for cross-cutting, the file is held at an angle, and, therefore the teeth are sharpened on an angle. We speak of this angle on the front and back of the teeth as "bevel."

### Bevel of the Point

The proper amount of bevel to give the teeth is very important, for if there is too much bevel the point will score so deeply that the fibres severed from the main body will not crumble out as cut, but must be removed by continued rasping. Figs. 11 and 12, B indicates the tooth and C the bevel on the point. The illustration, Fig. 11, shows—a tooth (enlarged) of a cross-cut saw with the same amount of bevel front and back. This saw is best suited for work in soft woods where rapid, rather than fine, work is required.

Fig. 12 shows a tooth (enlarged) of a



Fig. 11

Fig. 12

saw for medium hardwoods. This tooth has less bevel on the back which gives a shorter bevel to the point as at C.

It will be seen from these illustrations that the bevel on the front of the teeth is about the same, but the bevel of the point looking the length of the saw is quite different, depending upon the difference in the angles of the backs of the teeth. Here again, experience will indicate what is best. For the beginner, we recommend that the instructions given under "Filing the Teeth" be followed exactly.

## Proper Care of Saws, Tools, and Files

Moisture against a steel face, unless that face is well protected, means almost immediate rust. In order to keep a saw blade in the most perfect working condition, it must be entirely smooth on either side. Rust means pitting and, therefore, a rough surface. When you finish using a saw, rub it down with an oiled rag. Sperm oil is the best for this. In case the saw has been slightly rusted rub the blade down first with fine emery cloth and then apply the oil.

Another important thing is the way edge tools are put away. Whether a saw is placed in a tool box or on a shelf, or hung from a nail or hook, always take care that the tooth edge is placed in such a position that no other tools will knock against the teeth and injure them. Ordinary precaution will protect the teeth so that they will stand up a normal length of time.

Tools should always be placed with the cutting edges away from the person using them. An axe or hatchet should never be left standing on the floor where the foot may accidentally strike it. Never hang a saw from a bench where the teeth can scratch a leg or knee.

When you are through using a tool lay it down carefully. Do not drop it. A file, for instance, is an edge tool. Its

teeth, to give the greatest efficiency, are very hard. When a man carelessly throws a file across his bench he is likely to break off the edges of several teeth. A good tool deserves good treatment and the more care you give it the better service it will give you.

Common sense will lay down for you most of the necessary rules for caring for your tools. Keep them in good working order, in a clean container or neatly arranged on hooks, and keep them in a dry place. If these instructions are followed out there should be no question of the tools losing their efficiency except as they wear out from old age.

All Disston Saws, Tools, and Files are guaranteed to be perfect in workmanship and material. But it is not to be expected that we can make a tool that will do good work when it is not properly used and cared for.

Nearly every day we hear from someone who has used one of our saws 20, 30, and up to 50 and 60 years. On the other hand, some saws, after being used for a few months, are returned to us as defective when they are perfect as far as workmanship and material are concerned, but have been made useless through abuse or lack of ordinary care.



## Handy Tools for Setting and Sharpening Saws

Any one can sharpen a saw with the following Disston tools. They are the best and most practical tools made for the purpose.

### No. 10 Hand Saw Jointer

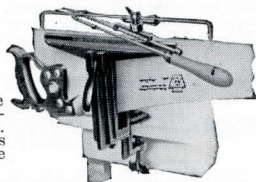


The Disston No. 10 Hand Saw Jointer is a simple, practical tool for dressing uneven saw teeth to uniform height before sharpening or resetting a saw.

Made of malleable iron, formed to fit the hand. It opens and closes like a hinge, and is fitted with a file of the proper cut to joint a saw. The file can be replaced readily by the turn of a set screw.

File furnished with each jointer.

### D-3 Filing Guide and Clamp



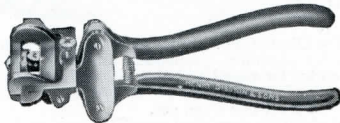
Saw and Guide in the proper position for filing. Full instructions with each Guide and Clamp.

The D-3 Filing Guide and Clamp is especially designed for those not experienced in filing hand saws. It enables the user to file each tooth at the same angle. It is made to file both cross-cut or rip saws. The length of the jaw is 12½ inches.

Clamp is japped; strong and durable; readily adjusted; eccentric lever opens and closes jaws; thumb screw attaches clamp to bench.

Guide frame is made of heavy steel wire; swivel attachment of iron, japped; file handle, made of hardwood, is turned for a comfortable grip. 5½-inch Disston Slim Taper File is used with the D-3 Filing Guide and Clamp.

### No. 28 Triumph Saw-Set



The Disston Triumph Saw Set makes saw setting easy. It is a strong tool, powerful in action, easily operated. The double plunger is the principal feature—one plunger holds the saw-set securely in position against the saw—while the other plunger sets the teeth. Can be adjusted to any set required; malleable iron head and handle; hardened steel plungers; coil spring opens handle.

No. 28 for hand saws, back saws, web saws, narrow band saws, 16 gauge and thinner, 10 points to the inch and coarser.

The No. 280 Triumph Saw Set is made for setting hand saws, back saws, butcher saws and other saws with 10 to 16 points to inch.

### Star Saw Set

The Disston Star Saw Set is made for setting hand, back, band, web, wood, and small circular saws not thicker than 18 gauge. The only practical set that can be operated by striking the plunger with a mallet, or working the plunger by foot power.



Japped; frame plunger and anvil of hardened steel; set can be regulated; coil spring returns plunger to position; frame shaped to fasten on work bench or in vise. Gauge supplied with each set to hold narrow band and web saws.

## Other Disston Tools for Home, Shop, and Farm Use

*Disston makes a full line of all tools presented here.*

### No. 10 Plumbers' Saw



The Disston No. 10 Plumbers' Saw is a handy tool for plumbers, carpenters and electricians. Specially tempered to cut joists, rafters, flooring, etc., in which nails are embedded; will also cut soil pipe, gas pipe, etc.

Blade of Disston Steel, specially tempered; 19 gauge on the tooth edge; taper-ground; 12 points to the inch.

Reversible and adjustable handle, weather-proof finish; carved; nickel-plated cluster bolt and wing nut. Lengths of blade 18 and 20 ins.

### No. D-19 Flooring Saw

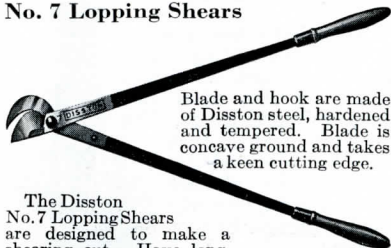


The Disston No. D-19 Flooring Saw is for general repair work. A favorite with electricians, plumbers and carpenters. Will cut section out of floor, side walls or ceiling, easily and neatly—section can be replaced if desired; no boring holes or chiseling necessary.

Blade of Disston Steel; 18-inch length; 9 points to the inch;  $3\frac{1}{4}$  inches at butt. Beginning at about the center of the back, the blade is toothed and curved to the point. Teeth on curved edge are shaped to enter a flat surface.

Weatherproof finished handle; carved, reversible and adjustable to various positions; nickel-plated cluster bolt and wing nut. Blade 18 ins.

### No. 7 Lopping Shears



Blade and hook are made of Disston steel, hardened and tempered. Blade is concave ground and takes a keen cutting edge.

The Disston No. 7 Lopping Shears are designed to make a shearing cut. Have long, strong handles. Blade and hook are held in place by a fine-threaded bolt and fastened with a nut. This permits fine tension adjustment. A stop log, forged on the hook arm, prevents arms from closing on fingers when lopping. The tang on arms pass through handle and washer, then are riveted on ends.

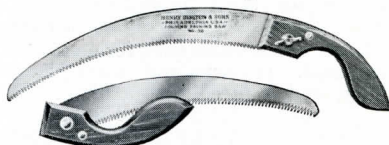
Handles are 8 inches long, reinforced by ferrule; and lacquered orange. Dimensions: hook  $2\frac{1}{2}$  inches; arms 24 inches; length overall  $28\frac{1}{2}$  inches.

### No. 166 Pruning Saw



The Disston No. 166 Pruning Saw has taper-ground, crescent-shaped blade; reverse teeth. Most popular saw of its type made. Cuts fast. Blade tapers to point for use in close quarters. Disston steel blade; 8 points to the inch;  $1\frac{1}{2}$  inches wide at handle. Handle—hardwood; lacquered orange color; three rivets fasten blade in handle. Made in 12 and 14 inch lengths.

### No. 38 Pruning Saw



The Disston No. 38 Pruning Saw has crescent-shaped blade, tapering to the point, for work in close quarters. Can be folded and carried in pocket when not in use. Blade of Disston Steel, taper-ground; long, slender, needle teeth. Beechwood handle, lacquered orange color; wing-nut and bolt adjustment. Butt end of blade rests firmly against rivet when pruning. Made in 10, 12 and 14 inch lengths.

### No. 4 Pruning Saw



The Disston No. 4 Pruning Saw has tapering blade with teeth on both edges. Made for general pruning. Blade of Disston Steel; one edge has plain cross-cut teeth, 8 points to the inch; other edge has patent teeth, known as "Lumberman" or "Lightning" style, for heavier work. Beechwood handle, weatherproof finish; large handhold for gloved hand. Three rivets fasten blade in handle. Made in 16, 18 and 20 inch lengths.

### No. 22 Pruning Saw



The Disston No. 22, is known as the "York State Pruner." Can also be used as a general utility saw, around the house and farm. Blade of Disston Steel, blued, 20 inches long, 1 inch wide at point, 5 inches wide at butt. Beech handle, weatherproof finish; large comfortable grip. Three brass saw screws.

## No. 30 Hedge Shears



The Disston No. 30 Hedge Shears is a fine tool made of best materials, finely finished.

Has proper balance; easy leverage.

Blades of Disston steel,  $1\frac{1}{4}$  inches wide, half oval, hardened and tempered, hollow ground, full polished, take a keen edge; one blade notched for heavier cutting.

Tang extends through handle and washer, then riveted at extreme end; nickel-plated ferrule. A bolt screwed into threaded hole in blade tightens blade to proper tension. Bolt is then locked in place by nut.

Handles of natural hardwood, clear lacquer; black lacquer band at ferrule end. Disston U. S. A., number and size of shears stamped on handle in gold.

Made in 8, 9 and 10-inch lengths.

## No. 40 Hedge Shears



The Disston No. 40 Hedge Shears is the most durable lightweight hedge shears made; easy action; clean cut. Blades, made flat,  $1\frac{1}{4}$  inches wide, Disston Steel, hardened and tempered; full polished; hollow ground. The blade, shank, and tang of this shear is one piece of forged steel. Tang extends through handle and gradually widens toward handle end. Handles hardwood, natural finish, nine inches long, fastened to the tangs with three solid brass rivets.  $1\frac{1}{2}$  inches wide at grip end; taper gradually toward the blades. A bolt screwed into threaded hole in blade is tightened until proper tension is secured, then locked in place by a lock-nut. Made in 8, and 9 inch lengths.

## Nos. 156 & 157 Professional Pruners



The Disston Professional Pruners are unquestionably the finest examples of pruner perfection ever offered.

The hook and cutter levers are drop forged from high carbon tool steel. Hook especially heat-treated, ground and polished. Blade is of special alloy steel, hardened, tempered, finely ground and highly polished; securely attached to cutter handle with double blind rivets. Equipped with the Disston patented tension adjustment. Drop forged, snap-action, end latch holds shear closed when not in use. Shear will not pinch hand. Handles knurled and highly polished. Free working springs that are kind to wrist and arm muscles. No. 156, Blued Volute Spring; No. 157, double leaf interlocked brass spring.

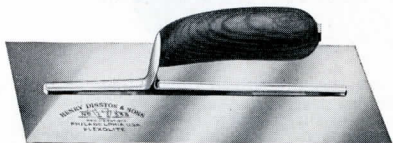
## No. 28 Finishing Trowel



The Disston No. 28 Finishing Trowel has improved mounting of specially treated ferrous metal that gives perfect balance; easy to use; less wrist and arm strain. Disston Steel blade, hardened and tempered; specially ground to place weight where it belongs, making a stronger and more flexible blade. Lacquer finish. Long mounting securely fastened to blade with ten countersunk rivets; flat thumb rest. Basswood handle, smooth finish. Tang through handle—threaded to receive steel hexagon barrel nut.

Lengths	$10\frac{1}{2}$	11	$11\frac{1}{2}$	12	inches
Widths	$4\frac{1}{2}$	$4\frac{3}{4}$	$4\frac{3}{4}$	5	inches
Thickness	24	24	24	24	gauge
Rivets	10	10	10	10	
Mounting	9	$9\frac{1}{2}$	10	10	inches

## No. 338 Flexolite Finishing Trowel



The Disston No. 338 Flexolite Finishing Trowel is a modern trowel to meet the needs of modern plastering. It has the "California Pattern" handle. Disston Steel blade, hardened and tempered; lacquer finish. Long aluminum mounting, with flat thumb rest, is fastened to the blade with ten rivets. Hardwood handle, smooth finish. Tang extends through handle—end threaded to receive brass hexagon barrel nut and washer.

Lengths	$10\frac{1}{2}$	11	$11\frac{1}{2}$	inches
Widths	$4\frac{1}{2}$	$4\frac{3}{4}$	$4\frac{3}{4}$	inches
Thickness	24	24	24	gauge
Rivets	10	10	10	
Mounting	9	$9\frac{1}{2}$	10	inches

## No. 15 Pointing Trowel

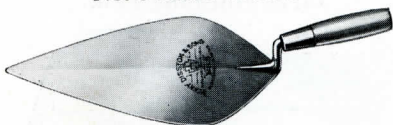


The only Pointing Trowel made with a spiral tang for locking the hickory handle to the trowel. Blade, post, and tang are forged from one piece of Disston Steel; hardened and tempered.

Lengths	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	inches
Widths	$2\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{8}$	$2\frac{3}{4}$	inches



### No. 5 Brick Trowel

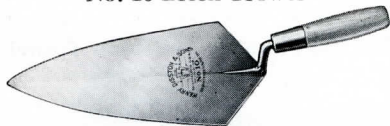


The Disston No. 5 "London Pattern" Brick Trowel is true-taper ground from heel to point and from center to edges for flexibility; post at right angles to the blade; handle set for proper lift and balance; edges shaped for striking brick. A favorite for brick laying when small mortar joints are required. Blade, post, and tang are forged from one piece of Disston Steel; hardened and tempered; lacquered. Hickory handle, lacquered, shaped to hand; strong steel ferrule,  $1\frac{1}{2}$  inches long. Spiral tang locks handle securely.

Lgths. 9  $9\frac{1}{2}$  10  $10\frac{1}{2}$  11  $11\frac{1}{2}$  12 ins.  
Widths  $4\frac{1}{8}$   $4\frac{1}{4}$   $4\frac{1}{2}$   $4\frac{3}{4}$   $4\frac{7}{8}$   $4\frac{7}{8}$  5 ins.

This trowel is also made in extra light weight at advanced price.

### No. 10 Brick Trowel



The Disston No. 10 "Philadelphia Pattern" Brick Trowel is true-taper ground from heel to point and from center to edges. Post at right angles to the blade; handle set for proper lift and balance; edges shaped for striking brick. This pattern trowel is more universally used than any other pattern. Blade, post, and tang are forged from one piece of Disston Steel; hardened and tempered after being shaped; polished; lacquered to keep blades bright and prevent rust. Hickory handle, lacquered, shaped to hand; spiral tang locks handle on trowel; heavy steel ferrule  $1\frac{1}{2}$  inches long.

Lgths. 9  $9\frac{1}{2}$  10  $10\frac{1}{2}$  11  $11\frac{1}{2}$  12 ins.  
Widths  $4\frac{3}{8}$   $4\frac{1}{4}$   $4\frac{1}{2}$  5  $5\frac{1}{8}$   $5\frac{1}{2}$   $5\frac{1}{2}$  ins.

This trowel is also made in extra light weight at advanced price.

### Dissteel Thin Planer Knives



In 1932, Disston metallurgists developed a steel—one which could be used for Thin Planer Knives, Moulding Knives, etc.—a steel for this purpose so different, so superior to ordinary high-speed steel that the steel itself was deemed worthy of the Disston name. . . . It, therefore, was named DISSTEEL.

DISSTEEL is guaranteed to be superior to High-Speed Steel in many respects.

Thin Planer Knives made of DISSTEEL have been used and tested on every kind of work in lumber mills, planing mills, furniture factories and other plants in all parts of the country. The result everywhere has been a country-wide acclaim for DISSTEEL Knives.

### No. 545 Wood Saw



The Disston No. 545 Wood Saw is a combination of the—No. 500 Frame—selected hardwood, stained walnut and varnished; double-braced stretcher; double rivet.

No. 45 Disston blade, thin back; plain tooth; round breast; blued;  $1\frac{1}{4}$  inches wide;  $4\frac{1}{2}$  points to inch.

Rust Proof Jumbo Rod.

Lengths of blade 30 and 32 inches.

### HANDLES FOR CROSS-CUT SAWS

#### Disston No. 119 Handle

The Disston No. 119 Handle is made to be fastened on the edge of the saw. It is  $13\frac{1}{2}$  inches long and  $1\frac{3}{8}$  inches in diameter. Made of hardwood; shaped for an easy, comfortable grip; fitted with heavy malleable iron castings; threaded bolt with a wing nut.



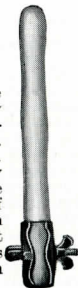
#### Disston No. 222 Handle

This is the best and strongest loop handle made. It is easily and quickly adjusted to, or removed from the saw. This handle has a very easy and comfortable grip. It is made of carefully selected hardwood, well-fitted with malleable iron castings.



#### Disston No. 103 Climax Handle

This is a reversible handle for holding saw in horizontal or perpendicular position. Made of hardwood. Castings are of grey iron, similar in style to the No. 119, but of lighter weight, with malleable iron bolt and nut.  $13\frac{1}{2}$  inches long and  $1\frac{3}{8}$  inches in diameter.



## Disston Precision-Ground Cross-Cut Saws

The etching, "Precision-Ground," on a Disston Cross-Cut Saw means just what it says: Precision-Ground from tooth edge to back, and from end to end of blade; that it is tapered absolutely true on both sides of the blade from tooth edge to back and is of uniform thickness on the entire cutting edge.

Every Precision-Ground Saw is proved accurate before it leaves the Works.

The true taper makes these new cross-cuts run easy, smooth, true, and fast.

These new cross-cuts are made of a new Disston Alloy Steel, which takes a higher temper than any other steel ever used in cross-cut saws, yet allows ease in setting. This steel makes tougher teeth, which stay sharp longer and also retain their set longer.

All the new Disston Precision-Ground Cross-Cut Saws have teeth of entirely new design. They have the largest gullets used in any cross-cut saw. No choking, no binding, no buckling.

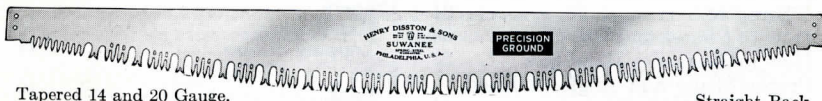
The cutting teeth are long, strong, and of correct shape for easy cutting. Their greater depth provides for longer wear. Strong bridges on the four cutters keep the teeth in line and prevent them from springing.

There are no lumps in these cross-cut saws. The blades are perfectly straight and true. They will run with less set, which makes them run easier. They are true at every point. Your set gauge will prove this fact. This makes it easy for the filer to give an even and perfect set to all the cutting teeth.

A black and orange strip, or sheath, protects the teeth. This is another identification mark of the new Disston Precision-Ground Cross-Cut Saws.

This new line of saws includes wide, medium and narrow blades, in both two-cutter and four-cutter patterns. The two-cutter type saws are especially designed for cutting hardwood, gumwood, cottonwood, etc.

### No. 495 Suwanee



Tapered 14 and 20 Gauge.

No. 495 SUWANEE—Used mostly for "bucking" or cutting fallen timber to length "Four cutters with raker tooth" type.

Straight Back.

Precision-ground six gauges thinner on the back than on the tooth-edge. Disston Alloy Steel. Regular lengths  $4\frac{1}{2}$  to  $6\frac{1}{2}$  feet.

### No. 289 Virginian



Tapered 14 and 20 Gauge.

No. 289 VIRGINIAN—Used mostly for "bucking" or cutting fallen timber to length. "Two cutter with raker tooth" type.

Straight Back.

Precision-ground six gauges thinner on the back than on the tooth-edge. Disston Alloy Steel. Regular lengths 5 to  $6\frac{1}{2}$  feet.

### No. 174 Tenon Tooth Cross-Cut Saw



This style of cross-cut saw is perhaps the oldest form in use. It is still used by a great many for bridge work, framing, and ordinary two-man sawing where one tool must do many kinds of work. Made of Disston Steel.

The No. 174 Tenon Tooth Cross-cut Saw is ground by the Disston process on lines to conform to the tooth edge of the saw. Four gauges thinner on back than on tooth edge. 4,  $4\frac{1}{2}$ , 5,  $5\frac{1}{2}$ , 6 feet.

### No. D-410 Cedar Savage One-Man Cross-Cut Saw

Especially adapted for cutting cedar. It is designed to be used by one man. Can be fitted with an auxiliary handle for two men. Made of Disston Hand Saw Steel.



A "four-cutter" saw; ample gullet room. Large hardwood handle with two horns. The grip is extra large, suitable for a gloved hand. This

saw is made in lengths 3 to 5 feet.

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# Did You Know That **DISSTON** Makes All These Different Items?

All of These Saws, Tools and Files  
Are of the Same Quality Found in

*"The Saw Most Carpenters Use"*

Back Saws  
Band Saws for Wood and metal



Bevels  
Buck Saws  
Butcher Saws and Blades

Carboloy Tipped Saws  
Carboloy Tipped Knives  
Chisels—Cold, Brick  
Circular Saws for Wood,  
Metal, and Slate, etc.

Compass Saws  
Coping Saws  
Cross-cut Saws and Tools  
Cylinder Saws  
Drag Saw Blades

Files and Rasps  
Grooving Saws  
Gauges—Carpenters' Marking

Hack Saw Blades  
Hack Saw Frames  
Hand, Panel, and Rip Saws  
Hedge Shears

Ice Saws  
Inserted Tooth Circular Saws  
Keyhole Saws  
Kitchen Saws

Knives—Cane, Corn, Hedge  
Knives—Circular—for Cork,  
Cloth, Leather, Paper, etc.  
Knives—Machine



Levels—Carpenters' and  
Masons  
Machetes  
Mandrels

Milling Saws for Metal  
Mitre-Box Saws



Mitre Rods  
One-Man Cross-cut Saws  
Plumbs and Levels

Plumbers' Saws  
Pruning Saws  
Re-saws  
Saw Clamps and Filing  
Guides

Saw Gummers  
Saw-sets  
Saw Screws  
Screw Drivers  
Screw-slotting

Saws  
Scroll Saws  
Segment Saws  
Shingle Saws  
Slate Saws—



Circular  
Squares—Try and Mitre  
Stave Saws  
Sugar Beet Knives  
Swages  
Tire Irons  
Tools for Repairing Saws  
Tool Steel  
Trowels—Brick, Plastering,  
Pointing, etc.



Veneering Saws  
Webs—Turning  
and Felloe  
Wood Saws  
Wrecking Bars

This is a partial list. There are thousands  
of items in the complete Disston line.

**HENRY DISSTON & SONS, Inc.**

**Philadelphia, U.S.A.**

Canadian Works, Toronto, Canada

